

SAMSUNG ELECTRONICS CO. LTD, ET AL. V. MANUFACTURING RESOURCES INTL, INC.
Michael Neal Gershowitz on 11/30/2023

1 UNITED STATES PATENT AND TRADEMARK OFFICE
2 CAUSE NO. IPR2023-00220
3 UNITED STATES PATENT NO. 9,173,322
4 SAMSUNG ELECTRONICS CO., LTD.)
5 AND SAMSUNG ELECTRONICS)
6 AMERICA, INC.,) D-E-P-O-S-I-T-I-O-N
7 PETITIONERS,) OF
8 V.) MICHAEL NEAL GERSHOWITZ
9 MANUFACTURING RESOURCES)
10 INTERNATIONAL, INC.,)
11 PATENT OWNER.)
12 = = = = =
13 ON NOVEMBER 30, 2023, AT THE LAW OFFICES OF KILPATRICK, TOWNSEND
14 AND STOCKTON, LLP, LOCATED AT 4208 SIX FORKS ROAD, SUITE 1400,
15 RALEIGH, NORTH CAROLINA.
16 APPEARANCES OF COUNSEL:
17 FOR THE PETITIONER: MS. NAOMI BIRBACH
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RALEIGH, NORTH CAROLINA 27609
COURT REPORTER: AIMEE C. RIGSBY

1 STIPULATIONS: PRIOR TO THE GIVING OF ANY TESTIMONY
2 BY THE WITNESS, IT WAS EXPRESSLY STIPULATED AND AGREED BETWEEN
3 THE PARTIES TO THIS ACTION, THROUGH THEIR RESPECTIVE COUNSEL,
4 THAT:

1. BY NOTICE AND/OR CONSENT, THE DEPOSITION OF
MICHAEL NEAL GERSHOWITZ WAS TAKEN ON THE 30TH DAY OF NOVEMBER,
2023, BEGINNING AT 9:03 A.M., AT THE LAW OFFICES OF
KILPATRICK, TOWNSEND AND STOCKTON, LLP, LOCATED AT 4208 SIX
FORKS ROAD, SUITE 1400, RALEIGH, NORTH CAROLINA, BEFORE AIMEE
C. RIGSBY, A COURT REPORTER AND NOTARY PUBLIC IN AND FOR THE
COUNTY OF PITT.

12 2. READING AND SIGNING OF THE TRANSCRIPT OF
13 TESTIMONY BY THE WITNESS IS HEREBY NOT WAIVED. CHANGES TO THE
14 TRANSCRIPT MAY BE MADE IN THE WITNESS'S OWN HAND, OUT OF THE
15 PRESENCE OF THE OFFICER, DELINEATED BY PAGE AND LINE NUMBER ON
16 THE ERRATA SHEET TO THE SIGNATURE.

17 =

EXAMINATION OF THE WITNESS

BY MS. NAOMI BIRBACH

PAGES 4 - 83

1	INDEX OF EXHIBITS		
2			
3			
4	EXHIBIT [1]	DECLARATION OF MICHAEL N. GERSHOWITZ U.S. PATENT NO. 8,854,595	PAGE 4
5	EXHIBIT [2]	DECLARATION OF MICHAEL N. GERSHOWITZ U.S. PATENT NO. 9,173,322	PAGE 47
6	EXHIBIT [3]	U.S. PATENT NO. 8,854,595	PAGE 6
7	EXHIBIT [4]	U.S. PATENT APPLICATION PUBLICATION US 2003/0043091	PAGE 9
8			
9	EXHIBIT [5]	U.S. PATENT NO. 7,800,706	PAGE 32
10	EXHIBIT [6]	U.S. PATENT NO. 9,173,322	PAGE 49
11	EXHIBIT [7]	U.S. PATENT APPLICATION PUBLICATION NUMBER US 2006/0199514	PAGE 60
12			
13	EXHIBIT [8]	KOREAN UNEXAMINED PATENT APPLICATION 10-2006-0016469	PAGE 72
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			

1 MICHAEL NEAL GERSHOWITZ, BEING BY ME DULY AFFIRMED
2 TO SPEAK THE TRUTH, DEPOSES AND SAYS:

3 ON EXAMINATION CONDUCTED BY MS. NAOMI BIRBACH:

4 **Q. Good morning, Mr. Gershowitz.**

5 A. Good morning.

6 **Q. Can you please state your full name for the record?**

7 A. Yes, my name is Michael Neal Gershowitz.

8 **Q. Thank you. And you've been deposed before, correct?**

9 A. Yes, I have.

10 **Q. About how many times?**

11 A. Probably fifteen or twenty.

12 **Q. Enough that we don't need to go through the ground**
13 **rules.**

14 A. I understand the ground rules, thank you.

15 **Q. When were you retained by MRI?**

16 A. I believe it was the beginning of this year. I'd
17 have to review my notes to see, but it was early this year, I
18 believe.

19 **Q. So early 2023?**

20 A. Early 2023.

21 **Q. Were you retained specifically to work on the IPRs?**

22 A. That is correct.

23 **Q. I'd like to hand you Exhibit [1]. Do you recognize**
24 **this to be your declaration in IPR number 2023-00199?**

25 A. Yes, I do.

1 Q. I'd like you to turn to paragraph thirty-five.

2 A. I'm there.

3 Q. In paragraph thirty-five, you provide your opinion
4 regarding the person of ordinary skill in the art. Is that
5 correct?

6 A. That is correct.

7 Q. And you opine that a person of skill in the art
8 would have had two to four years of experience in working with
9 electronic products. Do you see that?

10 A. Yes, I do.

11 Q. What do you mean by electronic products?

12 A. Electronic products would be products or devices
13 that have electronic components in them.

14 Q. So in your opinion, the person of ordinary skill in
15 the art would not specifically have to have experience working
16 with electronic displays?

17 MR. SANDERS: Objection to form.

18 A. So electronic products would include electronic
19 displays.

20 Q. If the definition in paragraph thirty-five of the
21 person of ordinary skill in the art said electronic displays
22 in place of electronic products, would you still qualify as a
23 person of ordinary skill in the art?

24 MR. SANDERS: Objection to form.

25 A. So again, as I stated before, electronic products

1 include electronic displays. And certainly at the time of the
2 invention I had experience working with electronic displays so
3 therefore, in either event, I would qualify.

4 Q. Do you understand that Petitioners offered a
5 different definition of the person of ordinary skill in the
6 art?

7 A. I believe I was informed of that.

8 Q. Would any of your opinions change if Petitioners'
9 definition of the person of ordinary skill was adopted instead
10 of your definition?

11 MR. SANDERS: Objection to form.

12 A. No, they would not.

13 Q. I'd like to turn to section one of your declaration,
14 which is the introduction section. And you set forth your
15 background in section one of your declaration, is that right?

16 A. Yes, I did.

17 Q. You did not describe any work with LCD displays in
18 your education and work experience described at paragraphs two
19 through nine, correct?

20 A. That is correct.

21 Q. Let's turn -- can I have the 595 patent?

22 A. Okay. Sorry.

23 Q. I've handed you what's marked as Exhibit [3]. Do
24 you recognize this to be a copy of U.S. Patent Number
25 8,854,595?

1 A. Yes, I do.

2 Q. I'd like to turn to the claims of the 595 patent.

3 A. I'm there.

4 Q. And specifically to claim one. Claim one of the 595
5 patent requires a system for cooling an electronic display,
6 right?

7 MR. SANDERS: Object to the form.

8 A. So claim one states a system for cooling an
9 electronic display, correct.

10 Q. And there are no further limitations on the form of
11 that electronic display in claim one --

12 MR. SANDERS: Objection.

13 Q. -- correct?

14 MR. SANDERS: Objection to form.

15 A. I'm afraid I don't quite understand your question
16 when you say -- could you repeat the question or state it
17 another way?

18 Q. Sure. The claim one does not specify the type of
19 electronic display that must be used within the claim, right?

20 MR. SANDERS: Objection to form.

21 A. That is correct.

22 Q. Claim one of the 595 patent also requires two side
23 panels placed adjacent to the constricted convection channel
24 and the posterior display surface. Do you see that?

25 MR. SANDERS: Objection to form.

1 A. So I see that claim one states a constricted
2 convection plate placed posterior to the posterior display
3 interface, two side panels placed adjacent to the constricted
4 convection plate. So I believe that would be affirmative to
5 your question.

6 Q. Claim one of the 595 patent does not limit the
7 location of the side panels, right?

8 MR. SANDERS: Objection to form.

9 A. It does state that the side panels are placed
10 adjacent to the constricted convection plate.

11 Q. And there are no other further limitations on the
12 location beyond that statement, right?

13 MR. SANDERS: Objection to form.

14 A. Well again, there are two side panels placed
15 adjacent to the constricted convection plate and the posterior
16 display surface, which then defining a constricted convection
17 channel having an entrance and an exit, so --

18 Q. So the only limitations on the location of the two
19 side panels are that they're placed adjacent to the
20 constricted convection plate and the posterior display
21 surface, right?

22 MR. SANDERS: Objection to form.

23 A. Is there a specific area of my opinions or in my
24 report that you're referencing this to?

25 Q. Just trying to get an understanding of your opinions

1 regarding the claim. So I'll repeat my question. The only --
2 the only limitation on the location of the two side panels in
3 claim one of the 595 patent is that they're placed adjacent to
4 the constricted convection plate and the posterior display
5 surface, right?

6 MR. SANDERS: Objection to form.

7 A. So again, the claim states a constricted convection
8 plate placed posterior to the posterior display surface, two
9 side panels placed adjacent to the constricted convection
10 plate, and a posterior display surface defining a constricted
11 convection channel having an entrance and an exit.

12 Q. So you agree that the statement you just -- the
13 limitation you just read is the only limitation direct to the
14 location of the two side panels, correct?

15 MR. SANDERS: Objection to form.

16 A. Again, the claim states what the claim states, which
17 is what I just read.

18 Q. Okay. I'd like to turn to your opinions regarding
19 the Takeuchi reference, and I'll hand you Exhibit [4]. This
20 is U.S. patent application number 2003/0043091, correct?

21 A. That is correct.

22 Q. And this patent application publication has been
23 designated as SEC exhibit 1004 in IPR number 2023-00199,
24 correct?

25 A. That's what's marked on the exhibit.

1 Q. Okay. And is it okay if I refer to this reference
2 as the Takeuchi reference?

3 A. That would be fine.

4 Q. So I'd like to turn to paragraph four of Takeuchi.
5 Takeuchi discloses a display system, correct?

6 MR. SANDERS: Objection to form.

7 A. That is what's stated in paragraph four. The first
8 sentence, "There has been proposed a unique display system
9 that includes," etc.

10 Q. And Takeuchi's display system includes a light guide
11 plate for transmitting light there through, correct?

12 MR. SANDERS: Objection to form.

13 A. Again, that is what's stated in paragraph four. It
14 goes on to say, "A light guide plate for transmitting light
15 there through."

16 Q. Okay. Takeuchi further states in paragraph four
17 that, "The driving portion is operated so as to display video
18 image on the light guide plate according to an inputted image
19 signal," correct?

20 A. That is correct. Paragraph four, about the third or
21 fourth sentence, says, "The driving portion is operated so as
22 to display video image on the light guide plate according to
23 an inputted image signal."

24 Q. You agree that Takeuchi's display system includes
25 electronic components, correct?

1 MR. SANDERS: Objection to form.

2 A. If there is a specific section of Takeuchi that
3 you'd like to refer to, I'd be happy to look at that. My
4 recollection of Takeuchi is it describes a display method,
5 which is electromechanical in nature. I don't have a specific
6 recollection that it describes the driving electronics, if
7 there are indeed driving electronics. I -- I don't want to
8 incorrectly answer the question. I think your question was --
9 or could you restate the question?

10 Q. The question was you -- do you agree that Takeuchi's
11 display system includes electronic components?

12 MR. SANDERS: Objection to form.

13 A. And again, to my recollection, I don't recall
14 specifically if electronic components are mentioned in
15 Takeuchi.

16 Q. Let's turn to paragraph twenty-seven. About midway
17 through the paragraph, Takeuchi states, "The driving portion
18 19 of the panel 16 can be operated so as to display video
19 image on the light guide plate 1 corresponding to an image
20 signal inputted to the display system." Do you see that?

21 A. Yes, I do.

22 Q. And so you agree that Takeuchi discloses video
23 drivers involved in the operation of the display, right?

24 MR. SANDERS: Objection to form.

25 A. So again, as I stated a few moments ago, the

1 statement there is, "The driving portion 19 of the panel --
2 panel 16 can be operated so as to display video image on the
3 light guide plate 1 corresponding to an image signal inputted
4 to the display system by controlling displacement operation,"
5 et cetera, et cetera. It doesn't use the word electronics.
6 It does use the word driving portion. But again, I don't have
7 a specific recollection that the word electronics is utilized
8 in the patent.

9 **Q. So you don't understand the video drivers described**
10 **in paragraph twenty-seven of Takeuchi to require electronics**
11 **to display the video?**

12 MR. SANDERS: Objection to form.

13 A. I'm -- I'm stating that Takeuchi did not use the
14 word electronics. I think that was the question.

15 **Q. Is a person of ordinary skill in the art though,**
16 **would that person understand Takeuchi's display to require**
17 **electricity to run the display?**

18 MR. SANDERS: Objection to form.

19 A. So I think in the preceding paragraph twenty-six,
20 there's statements made concerning on which a driver IC is
21 mounted opposite the glass plate, and the notion that there's
22 a driver IC would imply that electricity is required for this
23 device to function.

24 **Q. And what is a driver IC?**

25 A. That would be a driver integrated circuit.

1 Q. Would Takeuchi's display also utilize control power
2 supplies?

3 MR. SANDERS: Objection to form.

4 A. Again, if you could point me to where in Takeuchi
5 this mention of control power supplies?

6 Q. Is it your understanding that Takeuchi's device
7 would need to be plugged into electricity?

8 MR. SANDERS: Objection to form.

9 A. Again, I don't know that Takeuchi specifically
10 mentions the source of power for his device. I would agree
11 with you that electricity is required. Whether it's plugged
12 into an AC power source, whether it's battery-operated,
13 photovoltaic, whatever. I don't believe Takeuchi describes
14 that source of power.

15 Q. I'd like to turn back to Exhibit [1], which is your
16 declaration, and to paragraph fifty-eight on page twenty-nine.

17 A. That was paragraph fifty-eight?

18 Q. Yeah. And you can take a moment to review it for
19 yourself and let me know when you've read it.

20 A. All right.

21 Q. Okay. You see in the -- I believe it's the
22 second -- third sentence of the paragraph, that the types of
23 electronic displays discussed in the 595 patent include rear-
24 facing surfaces positioned behind the backlight assemblies of
25 suitable electronic displays. Do you see that?

1 A. Yes, I do.

2 Q. The electronic displays disclosed by the 595 patent
3 are not limited to displays with backlights, right?

4 MR. SANDERS: Objection to form.

5 A. I believe that is correct

6 Q. Let's turn to paragraph sixty-one. And you can take
7 a second to review your opinions if you need it.

8 A. I'm ready.

9 Q. So is it correct to say that your opinion is that
10 the components 16 and 17 are not a posterior display surface
11 because they don't form a single surface?

12 MR. SANDERS: Objection to form.

13 A. So I think I state in my report on that paragraph
14 sixty-one, "Further the panels 16 and 17 themselves do not
15 form a single surface."

16 Q. So in your opinion, is each of the panels 16 and 17
17 a posterior display surface?

18 MR. SANDERS: Objection to form.

19 A. Could you repeat the question, please?

20 Q. In your opinion, is each of the panels 16, 17 a
21 posterior display surface?

22 MR. SANDERS: Objection to form.

23 A. So as I stated in paragraph sixty-two, "It is
24 apparent from the figure that the back side of the Takeuchi
25 device is a grid of these panels with gaps formed between all

1 of them. Further, as I discussed above with respect to figure
2 4, the edge of the light guide is exposed. Thus, the back
3 side of the Takeuchi device does not have a posterior display
4 surface."

5 **Q. You agree that the panels 16 and 17 are behind light**
6 **guide plate 1, right?**

7 MR. SANDERS: Objection to form.

8 A. Yes, I would agree.

9 **Q. And you agree that the components 16, 17 are**
10 **surfaces, right?**

11 MR. SANDERS: Objection to form.

12 A. I am sorry. Did you say the components are
13 surfaces?

14 **Q. Yes.**

15 MR. SANDERS: Same objection.

16 A. I don't know that I would agree to that.

17 **Q. Do you agree that panels 16 and 17 have surfaces?**

18 A. I would agree to that.

19 **Q. And panels 16 and 17 are posterior to the display,**
20 **right?**

21 MR. SANDERS: Objection to form.

22 A. I would agree that the panels 16 and 17 are
23 posterior to the light guide plate.

24 **Q. Let's turn to paragraph seventy-three. Looking to**
25 **the last sentence of the paragraph, you see -- well, you first**

1 state that, "The 595 patent teaches that the access apertures
2 may be closed before operation." Do you see that?

3 A. Yes, I do.

4 Q. And then you go on to state that, "A POSITA would
5 understand that the integrity of a constricted convection
6 channel can be compromised by these additional openings, and
7 so they should be closed before operation." Do you see that?

8 A. Yes, I do.

9 Q. The specification of the 595 patent does not
10 disclose closing the access apertures before operation, right?

11 MR. SANDERS: Objection to form.

12 A. No, I do not agree with that.

13 Q. The specification of the 595 patent says the access
14 apertures may be closed before operation, right?

15 MR. SANDERS: Objection to form.

16 A. (Indicates)

17 Q. Is that -- you just nodded, so we need an answer.

18 A. So I believe in 595 patent, column six, lines
19 twenty-seven through twenty-nine states, "The access apertures
20 34 may be closed before the use of -- before using plugs or
21 other similar devices not shown in the figures."

22 Q. Right. It says may be closed, right?

23 A. That is the language used in the specification.

24 Q. The 595 patent nowhere says that the access
25 apertures must be closed, correct?

1 MR. SANDERS: Objection to form.

2 A. Okay. I have no recollection that it says it must
3 be closed.

4 Q. Okay. And claim eight of the 595 patent just
5 requires a plurality of access apertures through the
6 constricted convection plate, right? You can -- sorry. You
7 can turn to claim eight, and then I'll repeat my question.

8 A. Okay. If you could repeat the question, please?

9 Q. Sure. Claim eight of the 595 patent requires a
10 plurality of access apertures through the constricted
11 convection plate, correct?

12 A. That is what's stated in claim number eight.

13 Q. It does not require them to be closed, correct?

14 MR. SANDERS: Objection to form.

15 A. Not in claim number eight.

16 Q. Okay. You state earlier up in paragraph seventy-
17 three of your declaration, which is Exhibit [1], that, "The
18 access apertures described by the 595 patent are designed to
19 allow access to hardware located behind the constricted
20 convection plate 30, not to provide additional airflow paths
21 into or out of the constricted convection channel." Do you
22 see that?

23 A. That is what's stated in paragraph seventy-three of
24 my report.

25 Q. The access apertures described by the 595 patent

1 specification would allow air to flow in and out of the
2 channel, right?

3 MR. SANDERS: Objection to form.

4 A. So as I state in my report -- okay -- the apertures
5 are designed to allow access to hardware located behind the
6 constricted convection plate 30, not to provide additional
7 airflow paths into or out of the constricted convection
8 channel.

9 Q. Understood but would air -- let me rephrase. Would
10 the access apertures allow air to enter and exit through
11 those apertures?

12 MR. SANDERS: Objection to form.

13 A. The specification of 595 offers guidance that those
14 apertures may be plugged before operation.

15 Q. If the access apertures are not plugged before
16 operation, would air be allowed to flow in and out of the
17 access apertures?

18 A. If they are not plugged -- which I interpret and a
19 POSITA would interpret as not being the recommendation of
20 595 -- then, yes, air would flow through the unplugged
21 aperture.

22 Q. Let's turn to Takeuchi's figure 5 that you've
23 annotated on page forty-one of your declaration.

24 A. I'm there.

25 Q. And let's also -- so there is -- there are -- there

1 are two openings. Let me take a step back. Takeuchi
2 identifies component 53 as a partition plate, correct?

3 A. As I state on my report in paragraph seventy-seven,
4 "In contrast, Takeuchi's partition plate 53." So element 53
5 is a partition plate, as described by Takeuchi.

6 Q. Okay. And you agree that the openings on the bottom
7 of partition plate 53 are entrances, correct?

8 A. Could --

9 MR. SANDERS: Objection to form.

10 A. Could you be more specific with respect to which
11 openings you're referring to in the figure?

12 Q. Sure. So there's three openings in the partition
13 plate 53, correct? Let me actually rephrase that again.
14 There are three air inlets in partition plate 53 as shown in
15 figure 5, correct?

16 A. With respect to air inlets, there would appear to be
17 three air inlets -- two towards the bottom, one towards the
18 center, and an air outlet which is towards the top -- for a
19 total of four openings.

20 Q. Okay. And air flows into the cooling chamber
21 through the three air inlets, correct?

22 MR. SANDERS: Objection to form.

23 A. Could you repeat the question, please?

24 Q. Air flows into Takeuchi's cooling chamber through
25 the three air inlets that you've identified in figure five,

1 correct?

2 A. So as I state in my report on paragraph seventy-
3 eight at the top of page forty-two, "Airflow through these
4 filters is illustrated by ambient air (in blue) moving through
5 the inlets and warming (in yellow) as it moves within the
6 cooling chamber." And then I go on to state, "Takeuchi
7 explains this design is intentional because the ambient air
8 introduced into the cooling chamber from the fine filter 55 in
9 the lower portion of the partition plate has a temperature
10 increases with cooling while flowing towards the upper
11 portion." So -- and then he goes on, "However, since the
12 additional air intake vent with the fine filter 55B is
13 arranged in the middle portion of the partition plate 53 and
14 fresh ambient air is supplied, it is possible to cool the back
15 sides of the light guide plate 1 and panel 16, 17
16 substantially uniformly." So both in my statements and
17 Takeuchi's statements, there is airflow through those two
18 openings into the cooling chamber.

19 Q. Okay. So simply you agree that the air inlets of
20 Takeuchi are entrances to the cooling chamber, correct?

21 MR. SANDERS: Same objection.

22 A. Again, the word entrance is not present. I -- I
23 don't believe that word is used in that fashion. So we have
24 airflow into these openings, these inlets. So if there's a
25 specific meaning for entrance, I am not sure that I've used

1 that word in my report. If you can point me to that?

2 Q. Claim five -- I'm sorry, claim one of the 595 patent
3 requires an entrance to a channel, correct?

4 A. That is correct. In claim one of 595, you are
5 referring to Takeuchi and his figure, and I don't know that
6 the word entrance was used in Takeuchi or his figure.

7 Q. Understood, but I think you're not disputing that
8 the air inlets that you've identified in figure five are
9 entrances to Takeuchi's cooling chamber, correct?

10 A. No, I --

11 MR. SANDERS: Objection to form.

12 A. No, I am not.

13 Q. Okay. And you referenced earlier that there is an
14 exit to the cooling chamber in figure 5 as well, correct?

15 MR. SANDERS: Objection to form.

16 A. I'm sorry. Can you repeat the question, please?

17 Q. Figure 5 includes an exhaust 56, correct?

18 A. That is correct.

19 Q. And air exits the cool -- Takeuchi's cooling chamber
20 through the exhaust 56, correct?

21 A. That is my understanding, correct.

22 Q. So exhaust 56 is an exit from the cooling chamber,
23 correct?

24 A. That is correct.

25 Q. And the air -- the only exit from the cooling

1 chamber is through exhaust 56, correct? In figure 5.

2 MR. SANDERS: Objection to form.

3 A. That would be my interpretation of figure 5,
4 correct.

5 Q. And the air in figure 5 flows in one direction from
6 the entrances to the exit, correct?

7 MR. SANDERS: Objection to form.

8 A. The indications of the arrows in the annotation
9 would imply a single direction. Whether or not there's any
10 other turbulence or other factors, it would need a more
11 careful examination to be sure.

12 Q. Okay. But you agree that Takeuchi discloses arrows
13 showing airflow in a single direction from the entrances to
14 the exhaust of the cooling chamber shown in figure 5?

15 MR. SANDERS: Objection to form.

16 A. I agree it's shown that the airflow is from the
17 entrances, plural, to the exit. Correct.

18 Q. Takeuchi discloses other embodiments that do not
19 include a middle intake vent, correct?

20 MR. SANDERS: Objection to form.

21 A. Is there a specific embodiment that you are -- would
22 like to refer to?

23 Q. Sure. Let's look at figure 4.

24 A. I'm there.

25 Q. Figure 4 shows a partition plate without any middle

1 intake vents, correct?

2 MR. SANDERS: Objection to form.

3 A. That appears to be correct.

4 Q. So the embodiment in figure 4 shows airflow through
5 three entrances towards the bottom of the channel, correct?

6 MR. SANDERS: Objection to form.

7 A. Based on the three arrows that are present, it would
8 appear there are three entrances at the bottom. That is
9 correct.

10 Q. And the air exits through the top of the channel, is
11 that correct?

12 MR. SANDERS: Objection to form.

13 A. I believe, based on the arrow that is between the
14 annotations 47 and 46, that that is showing that air is
15 exiting from the top. That is correct.

16 Q. Let's turn back to your declaration to, I think,
17 paragraph eight-one. Eighty and eighty-one.

18 A. Okay. I'm there.

19 Q. So your opinion is that the thermal insulating
20 materials 52 disclosed by Takeuchi are not side panels because
21 they're not parallel to the airflow, is that correct?

22 MR. SANDERS: Objection to form.

23 A. That is correct.

24 Q. The claims of the 595 patent do not require that the
25 side panels be located parallel to the airflow, correct?

1 MR. SANDERS: Objection to form.

2 A. So as I stated in paragraph eighty-two of my report,
3 "In contrast, the 595 patent describes that its side panels
4 are oriented to be parallel to the direction of air flow,
5 thereby constricting airflow to travel from the entrance to
6 the exit of the constricted convention channel. 595 patent
7 466 through 55. This is shown in figure 5 of the 595 patent
8 as well, with the side wall panels colored in -- 32 colored
9 red are oriented relative to the airflow which is assisted by
10 fans 52."

11 Q. I understand. My question was about the claims
12 though. The claims do not -- of the 595 patent, do not
13 require that the side panels be oriented parallel to air flow,
14 correct?

15 MR. SANDERS: Objection to form.

16 A. So my understanding is interpreting the claims, I
17 need to look to the specification for supporting
18 clarifications. Clearly in the specification it is described
19 that the side panels should be parallel to the airflow.

20 Q. Okay. But you agree that the claims of the 595
21 patent themselves do not require that the side panels be
22 oriented parallel to airflow, right?

23 MR. SANDERS: Objection to form.

24 A. And I agree that in interpreting the claims, I need
25 to look to the specification and other intrinsic evidence

1 within the patent. And that intrinsic evidence and the
2 specification indicate that the side walls should be parallel
3 to the direction of airflow.

4 **Q. I understand your opinion, but I'd like you to agree**
5 **with me that the claims themselves do not require that the**
6 **side panels be oriented parallel to airflow.**

7 MR. SANDERS: Objection to form.

8 A. Specifically which claim are you inquiring about?

9 **Q. Claim one of the 595 patent.**

10 A. So claim one states at the column ten, line one,
11 "Two side panels placed adjacent to the constricted convection
12 plate and the posterior display surface finding a constricted
13 convection channel, having an entrance and an exit."

14 **Q. So the claims do not require that the side panel --**
15 **the side panels be oriented parallel to any air flow, correct?**

16 MR. SANDERS: Objection to form.

17 A. The claim does not use the word parallel. The claim
18 says that the two side panels be placed adjacent to the
19 constricted convection channel.

20 **Q. Okay. Thank you.**

21 A. Excuse me, channel plate. Constricted convection
22 plate. Excuse me.

23 **Q. Okay. You also dispute that Takeuchi discloses side**
24 **panels on the right and left sides of its cooling chamber,**
25 **correct?**

1 MR. SANDERS: Objection to form.

2 Q. I believe this is at paragraph eighty-five.

3 A. Okay. I'm sorry. Could you repeat the question?

4 Q. Yes. You dispute that Takeuchi discloses side
5 panels on the right and left sides of its cooling chamber,
6 correct?

7 A. So as I state on -- in paragraph forty-one at the
8 top of page forty-seven, "Thus, I do not agree that Takeuchi
9 suggests including additional side panels to prevent air from
10 entering the cooling chamber."

11 Q. Okay. So is -- I think, for the record, that was
12 paragraph eighty-five.

13 A. I apologize. That is correct. Paragraph eighty-
14 five.

15 Q. Okay. And you don't dispute that Takeuchi discloses
16 a cooling chamber, correct?

17 A. I believe in the words of Takeuchi, he describes an
18 area of his invention as being the cooling chamber.

19 Q. Okay. A chamber is typically enclosed, correct?

20 MR. SANDERS: Objection to form.

21 A. Again, I'm not exactly sure I fully understand.
22 When you say enclosed, could you be more specific?

23 Q. The word chamber typically refers to an enclosed
24 space, correct?

25 MR. SANDERS: Objection to form.

1 A. I would -- I would think that in general, a chamber
2 would be enclosed or to some degree enclosed. And again,
3 Takeuchi described the words cooling chamber in his -- in his
4 documentation.

5 **Q. And an enclosed space typically has four sides?**

6 MR. SANDERS: Objection to form.

7 A. I would think in three dimensions an enclosed space
8 would have six sides, but it might be circular, it might be
9 spherical, in which case it has no side. So an enclosed
10 space, yes. How many sides? I don't know that that would be
11 relevant.

12 **Q. That's fair. In paragraph -- in paragraph eighty-**
13 **four, you -- midway through the paragraph, you state that, "A**
14 **POSITA would have been -- would have --" sorry. "A POSITA**
15 **would instead have included filters to the sides of Takeuchi's**
16 **display like it does for its other openings to prevent such**
17 **contamination while allowing ambient air to enter the cooling**
18 **chamber," right? Do you see that?**

19 A. Okay. I see that, yes.

20 **Q. Okay. And Takeuchi does not disclose filters on the**
21 **right and left sides of its cooling chamber, right?**

22 MR. SANDERS: Objection to form.

23 A. So Takahuchi does not describe what is occurring on
24 the right and left sides of the chamber.

25 **Q. But Takeuchi does describe two different filters**

1 that allow air to enter through the partition plate 53, right?

2 We can turn to Takeuchi -- let's look at paragraph forty of

3 Takeuchi.

4 A. If you could repeat the question, please.

5 Q. Sure. Let's -- I'll ask a different question. So

6 looking at paragraph forty of Takeuchi -- let me see where

7 this is -- maybe two-thirds of the way down, Takeuchi states,

8 "An intake vent provided with a coarse filter, 54, is arranged

9 in the lower portion of rear cover 51." Do you see that?

10 A. Yes, I do.

11 Q. And the next sentence reads, "Further intake vents

12 provided with fine filters 55A, 55B are arranged in the lower

13 portion and middle portion of the partition plate 53

14 respectively at its regions opposite to the coarse filter 54

15 of the rear cover 51." Do you see that?

16 A. Yes, I do.

17 Q. So Takeuchi discloses two layers of filters,

18 correct?

19 MR. SANDERS: Objection to form.

20 A. When you say two layers of filters, could you

21 clarify that, please?

22 Q. Sure. Air -- to enter Takeuchi's cooling chamber,

23 air has to pass first through a filter in the rear cover 51,

24 and then through a filter in the partition plate 53, correct?

25 MR. SANDERS: Objection to form.

1 A. So again, I would agree that Takeuchi has a coarse
2 filter 54, and the air must first pass through the coarse
3 filter 54, and then subsequently the air will pass through the
4 fine filters, which are 55A and 55B.

5 **Q. So air has to pass through two filters to enter**
6 **Takeuchi's cooling chamber, right?**

7 MR. SANDERS: Objection to form.

8 A. Again, they pass through a coarse filter and a fine
9 filter.

10 **Q. So two filters?**

11 A. Yes. The reason I'm a little concerned about that
12 is that since there are two fine filters, the air -- I guess
13 each molecule of air has passed through two filters, but in
14 combination there are three filters involved, so the air in
15 the chamber could be from that combination of three filters.
16 So I don't want to confuse the facts.

17 **Q. Got it. Thank you for that clarification. So you**
18 **would agree that Takeuchi -- sorry. I'll rephrase that. You**
19 **would agree that Takeuchi's cooling chamber would not be open**
20 **to ambient air on the right and left sides, right?**

21 A. So --

22 MR. SANDERS: Objection to form.

23 A. -- I don't believe Takeuchi makes any statements
24 about the right or the left sides. Takeuchi has identified
25 these coarse and fine filters but is silent and has no

1 teaching on the right and the left sides.

2 Q. Okay. But given the fact that Takeuchi discloses
3 that ambient air must pass through two different types of
4 filters to enter its cooling chamber, you'd agree that a
5 person of skill in the art would not understand Takeuchi's
6 display to be open to ambient air on its right and left sides,
7 correct?

8 MR. SANDERS: Objection to form.

9 A. So again, since Takeuchi is silent on that, it's
10 very possible that the rear cover could extend over the sides
11 and therefore coarse air filter have -- excuse me, air being
12 filtered by the coarse filter could be available to the sides
13 where there could be a fine filter. Again, Takeuchi does not
14 teach what to do on the sides. And since the prevailing use
15 of cooling at this time would be introducing more air into the
16 chamber rather than less, it would be reasonable that a POSITA
17 would apply filters on the sides.

18 Q. But it's not your opinion that the sides would be
19 open to ambient air without a filter, right?

20 MR. SANDERS: Objection to form.

21 A. I don't believe I've offered a statement in my
22 declaration concerning the sides being open to ambient air. I
23 believe that I offered a statement concerning the placement of
24 filters on the sides.

25 Q. Okay. Turning back to figure 5 of Takeuchi -- which

1 you can look at Takeuchi itself or one of the figures in your
2 declaration. Figure 5 of Takeuchi is a cross-section,
3 correct?

4 A. So I believe that Takeuchi, in paragraph twenty,
5 refers to figure 5 as a sectional view, showing the second
6 embodiment of the cooling device. So the phrase that he used
7 is sectional view.

8 Q. Is there a difference between a sectional view and a
9 cross-section?

10 A. As used in this patent, I would see no difference
11 between a cross-section or a sectional view.

12 Q. Okay. The arrows in figure 5 of Takeuchi show air
13 coming in through a few different air inlets and exiting
14 through exhaust 56, right?

15 A. Could you be more specific with respect to the few
16 different air inlets?

17 Q. We've discussed at length that there are three air
18 inlets in figure 5, correct? To the cooling chamber.

19 A. That is correct. There are three arrows indicating
20 airflow into the cooling chamber. Two of them in the vicinity
21 of 55A, which I believe is a fine filter, and one of them in
22 the vicinity of 55B, which I believe is also a fine filter.

23 Q. There's no indication in figure 5 that air is
24 entering the channel through the sides of the display,
25 correct?

1 A. Again, figure 5 is a cross-section or sectional
2 view. It does not give any indication of -- of the sides or
3 what is occurring at the sides.

4 **Q. Okay. I am going to switch to a different**
5 **reference. It's been about an hour. Are you good? Do you**
6 **need a five-minute break?**

7 A. Why don't we take a brief?

8 **Q. Okay.**

9 A. Okay.

10 COURT REPORTER'S NOTE: An off-the-record break was
11 taken from 9:55 a.m. until 10:03 a.m.

12 ON CONTINUED EXAMINATION CONDUCTED BY MS. NAOMI
13 BIRBACH:

14 **Q. Okay. I'm handing you Exhibit [5].**

15 A. Thank you.

16 **Q. This is U.S. Patent Number 7,800,706, correct?**

17 A. That is correct.

18 **Q. And the inventor is Kim et al, correct?**

19 A. That is correct.

20 **Q. So is it okay if I refer to this as Kim?**

21 A. Yes, that would be fine.

22 **Q. Okay. Great. And for the record, this is SEC**
23 **Exhibit 1005 in IPR 2023-00199.**

24 A. That is what it states on the bottom of the page.

25 **Q. Great. Okay. So Kim discloses a display with a**

1 backlight unit having LEDs, correct?

2 MR. SANDERS: Objection to form.

3 Q. Let -- let's turn to the patent. Let's turn to
4 column four, line thirty-three, let's say. And Kim states,
5 "The backlight unit 130 comprises a plurality of light-
6 emitting diode LEDs as a light source, 131." Do you see that?

7 A. Yes, I do.

8 Q. Do you agree that the LEDs in Kim's display would be
9 mounted to a PCB?

10 MR. SANDERS: Objection to form.

11 A. I would agree that, in general, LEDs are components
12 that must be mounted on some substrate, and that a PCB would
13 be a reasonable substrate for mounting them.

14 Q. Okay. Let's turn to figure 2 of Kim. Figure 2
15 shows an exploded view of Kim's display, is that correct?

16 MR. SANDERS: Objection to form.

17 A. Figure 2 shows an exploded view of a display which
18 Kim is referencing to, correct.

19 Q. Okay. Fan 200 is a cooling fan, correct?

20 MR. SANDERS: Objection to form.

21 A. I believe that Kim, in his specification, refers to
22 the cooling fan 210. So, yes, that is a cooling fan as
23 referred to by Kim. And that was in column five, line twenty-
24 five. For example. I think there are multiple references.

25 Q. Yeah. And I was asking about item 200, which I

1 believe later in that same paragraph Kim -- I just lost it.
2 Kim -- earlier in column five, line sixteen, Kim refers to a
3 cooling fan unit 200, right?

4 A. I stand corrected. That is correct; column five,
5 line sixteen the cooling fan unit 200.

6 Q. Great. And cooling fan 200 is an inlet fan,
7 correct?

8 MR. SANDERS: Objection to form.

9 A. So I believe Kim states further down in column five
10 on lines forty-three through forty-five, "The cooling fan 210
11 may draw the cooling air from the outside into the heat-
12 generating parts or discharge the cooling air to the outside
13 through the heat-generating parts depending upon its
14 rotational direction."

15 Q. Let's look at figure 5. And this is a cro- --
16 figure 5 is a cross-section view of Kim's display, correct?

17 A. I think that Kim refers to this as a schematic view
18 of a cooling system that's in column three, line fifty-one.

19 Q. Would you agree that figure 5 is what we typically
20 refer to as a cross-section?

21 A. I would agree that figure 5 is what typically we'd
22 refer to as a cross-section.

23 Q. Great. The embodiment shown in figure 5 shows fan
24 unit 200 as an inlet fan, correct?

25 MR. SANDERS: Objection to form.

1 A. So based on the small, dashed arrows that are
2 indicated both to the left and the right of the blades of fan
3 unit -- or fan 200, it would appear that this fan is
4 functioning as an inlet fan.

5 **Q. So fan 200 draws air into the space between the**
6 **partition plate 140 and the backlight unit 130, correct?**

7 MR. SANDERS: Objection to form.

8 A. I'm sorry, can you --

9 **Q. I said partition plate. That's wrong in my outline.**
10 **I'll --**

11 A. Yeah, so -- so -- okay. If you could repeat the
12 question or clarify?

13 **Q. Yes, I will.**

14 A. Okay.

15 **Q. Thank you. So fan 200 draws air into the space**
16 **between the shield cover 140 and backlight 130, correct?**

17 MR. SANDERS: Objection to form.

18 A. I don't know that 130 is annotated in figure 5.
19 Could you please point that out to me?

20 **Q. Sure. We can see -- we can see it in figure 2. I**
21 **don't think it's -- it's specifically in that figure, but we**
22 **looked at specification earlier in column four. It says that,**
23 **"The backlight unit 130 comprises a plurality of light**
24 **emitting diodes, which are 131." So I think we can agree that**
25 **there is a backlight unit, although not expressly labeled in**

1 figure 5, right?

2 MR. SANDERS: Objection to form.

3 A. So again, the phrases or the terminology used in the
4 specification are light source 131, backlight unit 130.

5 Again, I'm not exactly certain what you're pointing to or wish
6 to be pointing. There are numerous objects in this -- in this
7 cross-section view. Could you be more specific, please?

8 Q. You agree there's a backlight unit in figure 5
9 though, right?

10 MR. SANDERS: Objection to form.

11 A. What is referred to as a backlight unit identified
12 as 130. So for example, in column four, line thirty-three, it
13 refers to a backlight unit 130. In figure 5, there is no
14 annotation on a 130 component.

15 Q. I understand, but you're not disputing that there is
16 a backlight unit in the display that is shown in figure 5,
17 right?

18 MR. SANDERS: Objection to form.

19 A. If you can point to that.

20 Q. Okay. Let's -- let's turn to your declaration to
21 page fifty-three.

22 A. I'm there.

23 Q. There is an annotated version of figure 5 from the
24 petition on page fifty-three of your declaration, correct?

25 A. Yes, there is an annotated -- at the top of page

1 fifty-three, an annotated diagram which appears to be figure
2 5.

3 Q. Okay. And do you see there is a component labeled
4 as the rear facing surface of backlight unit 130?

5 A. I see that's what the annotation says.

6 Q. Okay. You agree that the fan 200 pulled air into
7 the space between shield cover 140 and the rear facing surface
8 of the backlight unit 130 in figure 5 of Kim, correct?

9 MR. SANDERS: Objection to form.

10 A. So I -- I see that in the annotations, which are
11 reproduced in my report on page fifty-three. I do not see
12 that in figure 5 -- the unannotated figure 5 of Kim. But --
13 but I agree. The figure that is in my report, which was
14 reproduced from the petition, identifies a rear-facing surface
15 of backlight unit 130, and a shield cover 140, and that the
16 fan is drawing the air into that space.

17 Q. Okay. And after the air flows through the channel,
18 it exits through slits 117 prime, correct?

19 MR. SANDERS: Objection to form.

20 A. That is correct, both in the illustration and I
21 believe in the specification of Kim, it speaks to that.

22 Q. Okay. So during normal operation of Kim's display,
23 there is air flowing into the space between the partition
24 plate 140 and backlight unit 130, right?

25 MR. SANDERS: Objection to form.

1 Q. I said it again. I'll repeat the question. During
2 normal operation of Kim's display, there's air flowing in the
3 space between shield cover 140 and backlight unit 130,
4 correct?

5 MR. SANDERS: Objection to form.

6 A. And again, based on the annotations that were in the
7 petition, which I have reproduced on page fifty-three of my
8 report, that would be correct.

9 Q. Okay. And even looking at figure 5 of Kim though,
10 you agree that there is air flowing in the space between the
11 shield cover 140 and, you know, the number we see here is 133,
12 correct? You see number 133? And 131, right?

13 A. There are multiple items identified. 133, 131.
14 So --

15 Q. You see them, right?

16 A. I see them, yes.

17 Q. And 131 and 133 are both parts of the backlight
18 unit, right?

19 MR. SANDERS: Objection to form.

20 Q. Actually, I'll withdraw that. If we look at column
21 four of Kim, it states -- as I've pointed to a few times --
22 that, "The backlight unit 130 comprises a plurality of light-
23 emitting diodes, LEDs, as light source 131," right?

24 A. I'm sorry. Where in column four?

25 Q. Sorry. Thirty-three.

1 A. Line thirty-three.

2 Q. Yeah. It says, "The backlight unit comprises a
3 plurality of light-emitting diodes, LEDs, as light source
4 131," correct?

5 A. Yes, I see that.

6 Q. And so -- and we saw 131 labeled in figure 5, right?

7 A. Yes, we did.

8 Q. And then in that same column four, it goes on to say
9 that, "There is a circuit board 133 that is combined to the
10 rear side of the backlight unit 130." Do you see that?
11 That's around line forty.

12 A. So I see it states a circuit board 133 that applies
13 or controls power to the light source 131 and so on. It's
14 combined on the rear side of the backlight unit 130.

15 Q. Right. So we have 131 that's the LEDs that are part
16 of the backlight unit, and we have 133 that is mounted to the
17 back of the backlight unit identified in figure 5, right?

18 A. That is correct.

19 Q. So it's fair to say that there is also a backlight
20 unit shown in figure 5, albeit not labeled as 130, right?

21 MR. SANDERS: Objection to form.

22 A. Again, I -- I'm at a loss for what exactly is the
23 backlight unit. You're pointing to components of the
24 backlight unit?

25 Q. Are you disputing that there's a backlight unit in

1 an embodiment shown in figure 5?

2 A. I am not disputing that there's a backlight unit.
3 What I'm saying is figure 5 does not clearly identify the
4 backlight unit.

5 Q. Okay. But it's fair to assume the backlight unit
6 includes 131, right?

7 A. The backlight unit certainly includes 131, which is
8 the light source. That is correct.

9 Q. And 133 is mounted onto the backlight unit, right?

10 A. That is what's stated in the specification, yes.

11 Q. Okay. So during normal operation of Kim's
12 display -- and this doesn't have to be with reference to
13 figure 5, I just thought figure 5 would help us agree on this.
14 During normal operation of Kim's display, there's air flowing
15 into the space between shield cover 140 and backlight unit
16 130, correct?

17 MR. SANDERS: Objection to form.

18 A. Again, on the annotated figure -- which is an
19 annotation of figure 5 that appears in my report on page
20 fifty-three -- it is shown in color, the color green, and it's
21 identified as shield cover 140. Then there is shown in red a
22 vertical line which is indicated as rear facing surface of
23 backlight unit 130. So that -- that's an annotation which
24 appears in the -- in the documents that were provided, but
25 they do not appear in the patent itself.

1 Q. Okay. If we look at the patent -- give me a second.
2 Do you agree with the annotations in -- that you just pointed
3 to? Okay. If we look at column four of the 706 patent --
4 sorry. The Kim patent.

5 A. Okay.

6 Q. It states in line fifty-three to -- sorry -- fifty-
7 four to fifty-five, that, "There is a space formed between
8 shield cover 140 and the backlight unit 130," correct?

9 A. Yes, I see that on line fifty-four and fifty-five.
10 "With a space formed between the shield cover 140 and the
11 backlight unit 130."

12 Q. And you agree that air flows in this space, right?

13 MR. SANDERS: Objection to form.

14 Q. You can read on to column five. It discusses the
15 whole point of Kim's invention is that air is flowing into
16 this space from the fan, draws air into the cooling space
17 between the backlight unit 130 and the shield cover 140,
18 correct?

19 MR. SANDERS: Objection to form.

20 A. Are you referring to lines thirteen of column five
21 where it refers to the rear side of backlight unit 130 while
22 the cooling air flows through a space among the backlight unit
23 130?

24 Q. Sure. I'm just trying to get an understanding of
25 how Kim's display works, which is disclosed in column four,

1 and five, and in the figures. I'm just trying to under -- get
2 to -- to get to an understanding of how the display operates.
3 So would you agree with me that during normal operation of
4 Kim's display, there is air flowing into the space between
5 shield cover 140 and backlight unit 130?

6 MR. SANDERS: Objection to form.

7 A. So again, as I've said in the annotated diagram on
8 page fifty-three of my report -- okay -- there is a red
9 vertical line identifying a backlight unit or rear surface of
10 backlight unit 130 -- okay -- that is not the annotation of
11 figure 5. That was an added annotation. I agree there are
12 arrows showing airflow -- or what's perceived to be airflow --
13 through the space between that red line and the green line
14 which is identified as shield cover 140 which is in figure 5.
15 So, yes, there's air flowing through that -- that space or
16 that volume.

17 Q. Okay. And this air flows directionally from the
18 entrance through fan 200 to the exits which are slits 117
19 prime, correct?

20 MR. SANDERS: Objection to form.

21 A. That is what's shown in the figure.

22 Q. And this air removes heat from the backlight unit
23 130, correct?

24 A. That is correct.

25 Q. Let's turn to page fifty-one of your declaration.

1 There's an annotated version of Kim in the middle of the page
2 here, is that right?

3 A. That is correct. Kim figure 2 annotated is what it
4 is labeled.

5 Q. Did you create this figure?

6 A. I did not personally create the figure.

7 Q. Was it created at your direction?

8 A. It was created in response to discussions that I had
9 with counsel.

10 Q. You've squeezed elements 140 and 130 together, is
11 that correct?

12 A. So as they appear in figure two of Kim, which is an
13 exploded -- what's referred to as an exploded diagram, the
14 elements 130 and 140 have been separated for purposes of that
15 illustration. So in this illustration, which I have on page
16 fifty-one, I have placed those elements back in the way that
17 they would be in a normal assembled and operating display.

18 Q. Okay. And the figure as annotated on page fifty-one
19 of your declaration does not actually appear in the Kim
20 patent, correct?

21 A. That is correct.

22 Q. What are the components that you've colored yellow
23 in annotated figure 2 of Kim?

24 A. Could you repeat the question, please?

25 Q. What are the components that you've colored yellow

1 in figure 2 as annotated on page fifty-one of your
2 declaration? Sorry. Fifty-one.

3 A. So for clarification, if you were to go to page
4 fifty-five of my declaration, you will see there the
5 components which have been colored green and yellow as they
6 appeared in my annotated figure on fifty-one. And you can see
7 there it was annotated in those. The yellow are indicated or
8 annotated as two side panels adjacent to the constricted
9 convection plate and the posterior display surface. That was
10 the annotation from the petition. And in paragraph ninety-
11 eight, I refer to that petition also references alleged side
12 panel in Kim figure 2. And then I refer to the petition and I
13 go on to say, "However, what is shown in figure 2 appear to be
14 the same edges of display cover as shown in figure five and
15 discussed above." So those yellow items -- and I believe that
16 yellow annotation was from the petition -- those yellow
17 annotations are these edges of the display cover 140.

18 Q. So I just want to make sure I understood that. Do
19 you agree that the yellow components are side panels?

20 MR. SANDERS: Objection to form.

21 A. No. As I state, I state there that the yellow
22 components appear to be the same edges of the display cover
23 140 shown in figure 5 and discussed above.

24 Q. Okay. So you would refer to them as edges of the
25 display cover 140?

1 A. That's what I used in my declaration.

2 Q. Okay. So if we look back at page fifty-one, at that
3 annotation, is it your opinion that when the exploded view
4 components in figure 2 are pushed together that the edges of
5 the display would be on top of what I think is the sides of
6 the backlight as you've shown in the figure on page fifty-one?

7 MR. SANDERS: Objection to form.

8 A. So I think as I state in -- excuse me. Could you
9 repeat the question, please?

10 Q. Can you repeat the question? Okay. I have the
11 question. Court reporter over here. Is it your opinion that
12 when the exploded view components in figure 2 are pushed
13 together, that the edges of the display would be on top of the
14 sides of the backlight as it seems to be shown in the figure
15 on fifty-one?

16 MR. SANDERS: Objection to form.

17 A. Okay. So I believe the words that I used on
18 paragraph ninety-nine at the bottom of page fifty-five, "Once
19 so mated, it is apparent from the diagram in figure 2 that
20 these side panels are positioned to be adjacent to the
21 backlight unit 130, and thus are not exposed to any air
22 circulating within the shield cover 140."

23 Q. Okay. Let's take a look at page fifty-three. And
24 we've -- we've looked at this a bit. This is a fig -- an
25 annotated version of figure 5 from the petition, right?

1 A. That is correct.

2 Q. And we see these -- these yellow components
3 annotated as side panels in this figure, right?

4 A. Yes, I do.

5 Q. Okay. And I understand you disagree that -- that
6 they are side panels, but these yellow components in figure 5
7 do extend into the cooling chamber, correct?

8 MR. SANDERS: Objection to form.

9 A. Can you clarify what you mean by "they do extend
10 into the cooling chamber"?

11 Q. Yeah. If we look closely at the figure, the
12 component that has been highlighted yellow does extend into
13 the space between the backlight unit and the shield cover 140,
14 right?

15 MR. SANDERS: Objection to form.

16 A. So figure 5, to my understanding, I believe was
17 referred to as a schematic, I believe. We can look back to
18 see exactly what it was referred to, but it is not necessarily
19 to scale, so I don't know exactly what can be determined by
20 any indication that it is extending in any direction because
21 it -- again, it's not a scale drawing, so I don't know what
22 that is suggesting.

23 Q. So I think you said before -- and I'm not -- it's in
24 paragraph ninety-nine. You agree that what you're describing
25 as the edges of the display cover 140 are adjacent to

1 backlight 130, right?

2 A. I'm sorry, can you point me to -- where am I?

3 Q. Yeah. In paragraph ninety-nine you say, "Once so
4 mated, it is apparent from the diagram in figure 2 that these
5 side panels are positioned to be adjacent to the backlight
6 unit 130," right?

7 A. That is correct.

8 Q. And these same so-called side panels are also
9 adjacent to the shield cover 140, right?

10 MR. SANDERS: Objection to form.

11 A. So is the question are the side panels adjacent to
12 the shield cover?

13 Q. Yes.

14 MR. SANDERS: Objection to form.

15 A. Yes, it would appear that the side panels -- well,
16 let me correct that. What is referred to as side panels -- I
17 don't agree that they are side panels -- but the yellow
18 component is adjacent to, or connected to, or an extension of
19 the green component, which is identified as a shield cover.

20 Q. Okay. Thank you. So let's now actually switch to
21 the 322 patent for a second. Which I know I wanted to do the
22 declaration. So I'm now going to hand you what I had
23 previously marked as Exhibit [2]. I'm sorry. We're a little
24 bit out of order.

25 A. Thank you.

1 Q. And do you recognize Exhibit [2] to be your
2 declaration regarding U.S. patent number 9,173,322?

3 A. Yes, I do.

4 Q. Okay. So I want to turn to your opinions regarding
5 the bracket limitation in the 322 patent with respect to Kim.
6 So we can turn to, I think, paragraph seventy-six.

7 A. Okay. Yes.

8 Q. And in -- on page forty-four, there is an annotated
9 version of figure 2 from the petition, correct?

10 A. That is correct.

11 Q. And there are yellow components in this annotated
12 figure that have been identified as brackets, correct?

13 A. That is what the figure shows.

14 Q. You don't dispute that these yellow components are
15 brackets, right?

16 MR. SANDERS: Objection to form.

17 A. No, I do not agree that these are brackets. So I --
18 I do dispute that they are brackets as identified.

19 Q. Okay.

20 A. Let me -- let me further clarify that.

21 Q. Okay.

22 A. "The ident- --" as I stated in paragraph seventy-
23 six, "The identified brackets do not connect to the posterior
24 surface identified by the petition. The petition identifies
25 the rear side of the backlight unit as the posterior surface

1 and the rear side of the PCB as recited in Claim 4. But the
2 brackets slide in alongside of the backlight unit as
3 illustrated by the additional red dashed lines in the further
4 annotation of figure 2." So therefore, these yellow annotated
5 components, if they are brackets, are not brackets as are
6 described in the limitations of the -- of the 322 patent.

7 **Q. Right. So your dispute is whether the brackets**
8 **connect the posterior -- sorry -- connect the posterior**
9 **surface with the constricted convection plate, right?**

10 MR. SANDERS: Objection to form.

11 A. Has 322 been introduced yet?

12 **Q. No, we can introduce it. I'm handing you Exhibit**
13 **[6]. This is U.S. Patent Number 9,173,322. So you can turn**
14 **to claim one or claim five, both require the brackets. So my**
15 **understanding based on your declaration is that your dispute**
16 **is whether these components that Petitioners identified as**
17 **brackets connect the posterior display surface with the**
18 **constricted convection plate, right?**

19 MR. SANDERS: Objection to form.

20 A. So again, page forty-four of my declaration is
21 dealing with ground two, which is claim five. Claim five of
22 the 322 bracket specifically says in column ten, lines twenty-
23 three through twenty-four, "The LCD from claim four further
24 comprising at least one bracket which connects the posterior
25 surface with the constricted convection plate." So as I've

1 indicated in my report in paragraph seventy-six on pages
2 forty-four and forty-five that this alleged bracket is -- and
3 I quote on the top of page forty-five, "But the brackets slide
4 in alongside of the backlight unit 130, as illustrated by the
5 additional red dashed lines in the further annotated figure 2
6 shown below." So in answer to your question, they are not.
7 These alleged brackets are not connected to the posterior
8 surface.

9 **Q. Right. So you're disputing that the claim is met**
10 **because the brackets are not in -- performing the function**
11 **that's claimed, right?**

12 **MR. SANDERS:** Objection to form.

13 **A.** I'm not -- I'm not referring to function. I don't
14 know if you're in some way referring to a doctrine of
15 equivalence.

16 **Q. No.**

17 **A.** What I'm stating is claim five -- the limitation of
18 claim five says at least one bracket which connects the
19 posterior surface with the constricted convection plate. And
20 what I've indicated in my report is that the posterior
21 surface -- which has been identified in the petition -- is not
22 the surface to which this alleged bracket connects.

23 **Q. Right. So you're not disputing that these**
24 **components are brackets, you're simply disputing whether they**
25 **connect the posterior surface with the constricted convection**

1 plate as claimed, right?

2 MR. SANDERS: Objection to form.

3 A. I don't believe I've offered a statement or an
4 opinion on if these are or are not brackets. If you'd like to
5 point me to a section of my declaration concerning that, I'd
6 be glad to clarify. But to my recollection, I do not recall
7 referring to them as brackets other than referencing the
8 annotations that were in the petition. And again, as it
9 pertains to claim five, ground two, these alleged brackets do
10 not connect to the posterior surface of the display.

11 Q. So you don't have an opinion one way or another as
12 to whether these components that have been identified as
13 brackets by Petitioner are brackets?

14 MR. SANDERS: Objection to form.

15 A. Again, I would ask if there's a specific paragraph
16 in my declaration that you're referring to. I'd be happy to
17 clarify.

18 Q. You just said you didn't offer an opinion one way or
19 another that -- that these yellow components are brackets,
20 right? I'm just trying to confirm what you said.

21 MR. SANDERS: Objection to form.

22 A. What I said is I don't recall that I offered such an
23 opinion. And, if you'd like, I'll review my report to see if
24 I did offer an opinion on whether these were or were not
25 brackets. So what I'm stating right here in the context of

1 our discussion on pages forty-four and forty-five, the claim
2 five limitations are not met because the alleged bracket is
3 not connected to the posterior surface on the rear side.

4 **Q. Okay. You agree that these alleged brackets are**
5 **used to attach the shield cover to the sides of the backlight,**
6 **correct?**

7 MR. SANDERS: Objection to form.

8 A. I would agree that the highlighted yellow section is
9 what is used to connect the shield cover to the backlight
10 unit.

11 **Q. Okay. You don't dispute that brackets were well**
12 **known for use in electronic products by 2008, right?**

13 MR. SANDERS: Objection to form.

14 A. I don't think I was asked to specifically opine on
15 that, but I would agree that brackets are well known both in
16 mechanical as well as electrical disciplines.

17 **Q. And you'd expect that brackets would have been used**
18 **in electronic displays by 2008, correct?**

19 MR. SANDERS: Objection to form.

20 A. It's a very broad statement that you're making. If
21 the design of an electronic display required a bracket, then
22 the use of a bracket and the formation of a bracket would be
23 understood.

24 **Q. Okay. And modifying or adding brackets to a display**
25 **would have been within the skill of a person of ordinary skill**

1 in the art in the 2008 timeframe, right?

2 MR. SANDERS: Objection to form.

3 A. Again, that's a very broad statement. If there's a
4 specific example you'd like me to comment on, I'd be happy to
5 do that.

6 Q. I'm just asking for -- for your opinion as to
7 whether the person of skill in the art in the 2008 timeframe
8 would have understood how to add or modify brackets in
9 displays?

10 MR. SANDERS: Objection to form.

11 A. I think as I previously stated, brackets are well
12 understood in both mechanical and electrical disciplines, and
13 potentially other disciplines.

14 Q. Okay. Thank you. You would agree that metal core
15 PCBs were well known by 2008, correct?

16 MR. SANDERS: Objection to form.

17 A. Yes, I would.

18 Q. Metal core PCBs had been commercially used in LCD
19 displays by 2008, correct?

20 MR. SANDERS: Objection to form.

21 A. As the use may dictate, there were designs that
22 could benefit from the use of metal core PCBs. There were
23 also designs that did not require metal core PCBs.

24 Q. Okay. But you agree that there were some LCD
25 displays that utilized metal core PCBs in the 2008 timeframe?

1 MR. SANDERS: Objection to form.

2 A. Yes, I do.

3 Q. And metal core PCBs were also used in indoor LCD
4 displays by the 2008 timeframe, correct?

5 MR. SANDERS: Objection to form.

6 A. So as either necessitated by the design of the
7 display or at the discretion of the designer, metal core PCBs
8 could be used and were utilized in displays in that time
9 period.

10 Q. Including indoor displays?

11 MR. SANDERS: Objection to form.

12 A. I would have to review a specific model, but to the
13 best of my understanding, they could have been used in indoor
14 displays.

15 Q. Okay. That's why I was confused. Let's go back to
16 the other declaration. I'd like to turn to paragraph 106 of
17 your 595 declaration, which is Exhibit [1].

18 A. I'm sorry, what paragraph was that?

19 Q. 106, which is on page fifty-eight.

20 A. Okay. I'm there.

21 Q. Okay. In the last sentence you say that this would
22 suggest to the POSITA to avoid using MC PCBs unless the
23 increased cooling was warranted for a particular application,
24 right?

25 A. I see that, yes.

1 **Q. So you agree that metal core PCBs allow for more**
2 **efficient backlight cooling, correct?**

3 MR. SANDERS: Objection to form.

4 A. So as I stated in this paragraph, metal core PCBs
5 were more costly and still are more costly than conventional
6 PCBs, which would increase the cost of the display device, in
7 this case the Kim device. So again, the metal core PCB,
8 whether it was used or not, is a design decision that would be
9 made based upon the thermal solution needed to keep the LEDs
10 at a proper operating temperature or below an excessive
11 temperature.

12 **Q. Okay. So you agree that there are benefits of using**
13 **metal core PCBs in certain circumstances, right?**

14 MR. SANDERS: Objection to form.

15 A. Again, the metal core PCB could be part of the
16 cooling system. There could be benefits associated to that,
17 and it would depend upon the specific application whether or
18 not the metal core PCB was warranted because of the increase
19 in cost that the metal core -- metal clad PCB would bring.

20 **Q. Okay. And you don't dispute that the Hong reference**
21 **discloses a metal core PCB, right?**

22 MR. SANDERS: Objection to form.

23 A. That is correct, I don't dispute that. I don't
24 believe Hong has been introduced, but as I state in my report.

25 **Q. Okay. Let's turn to paragraph 108 of your**

1 declaration.

2 A. This is 108 of the 595 declaration?

3 Q. Yes.

4 A. Okay.

5 Q. You say a few sentences down that Kim's device is a
6 conventional workstation monitor. Do you see that?

7 A. Yes, I do.

8 Q. Kim actually discloses that -- that the display may
9 be a TV or a computer monitor, right? Happy to look at Kim if
10 you would like to. So let's turn to Kim.

11 A. Please, if we could.

12 Q. So let's turn to column three, line sixty-four to
13 sixty-six.

14 A. Okay. Your question?

15 Q. So Kim discloses that its display may be a TV or a
16 computer monitor, right?

17 A. Yes. As stated on column three, lines sixty-four to
18 sixty-five, "Although a display apparatus may generally
19 comprise a TV or a computer monitor, the TV will be explained
20 as one of the exemplary embodiments of the present invention
21 herein after."

22 Q. Okay. And when you say in paragraph 108 of your 595
23 declaration that Kim's device is a workstation monitor, that's
24 actually different from a TV, right?

25 MR. SANDERS: Objection to form.

1 A. So my choice of words in this sentence probably was
2 not the best choice of words because it -- it does not matter
3 if it was a workstation monitor, or a TV, or a computer
4 monitor. The opinions would be the same.

5 Q. Okay. Let's turn to your 322 patent declaration,
6 which is Exhibit [2]. Sorry, I know there's a lot of moving.

7 A. Okay.

8 Q. And let's turn to page forty of that declaration.

9 A. Okay. I'm there.

10 Q. Great. So in the middle of the page, there is an
11 annotated version of figure 2 from the petition. Do you see
12 that?

13 A. Yes, I do.

14 Q. And there is a rear side of backlight unit 130
15 colored in red. Do you see that?

16 A. Yes, I do.

17 Q. And there's also shield cover 140 covered in green,
18 right?

19 A. I see that in the illustration.

20 Q. You agree that the shield cover 140 in green is
21 substantially parallel to the rear side of the backlight unit
22 130 colored in red, right?

23 MR. SANDERS: Objection to form.

24 A. No, I do not. I don't believe I've stated that in
25 my report.

1 **Q.** But looking at figure 2 as annotated on page forty,
2 you agree that it appears that these two components are
3 substantially parallel to each other, the shield cover 140 and
4 the rear side of backlight unit 130?

5 MR. SANDERS: Objection to form.

6 A. So I think as I refer to paragraph sixty-eight of my
7 report, "Further, I note that figure 2 cited by Mr. Smith-
8 Gillespie illustrates that the backlight unit 130 itself does
9 not have a uniform rear surface, but instead has protrusions
10 and different elevations, such as circuit board 133, power
11 supply 250, controller 260, and the unlabeled component
12 protruding rearward from the upper portion of the backlight."
13 And I reference Exhibit 1002.086, paragraph 131. I go on in
14 paragraph sixty-nine to state that, "Mr. Smith-Gillespie
15 shades all of these features as being the rear side of
16 backlight unit 130 but does not address the non-uniform shape
17 of the rear surface with respect to the shield cover 140. For
18 example, Mr. Smith-Gillespie does not acknowledge the
19 posterior surface of Kim's backlight assembly 130 is not flat,
20 but instead includes a variety of different elevations,
21 including the yellow highlighted portion above, as well as
22 circuit board 133, shaded blue, that is affixed to it by
23 screws 135."

24 **Q.** Okay. Let's move on. Let's turn back to the Kim
25 reference, which is Exhibit --

1 A. [5].

2 Q. -- [5]. Thank you. And let's turn to column five,
3 lines thirty-eight to forty-two.

4 A. I'm sorry, which lines was that in column five?

5 Q. Thirty-eight to forty-two. So Kim says here that,
6 "Figures 2 and 5 show the cooling fan unit 200 placed in a
7 lower central portion of the shield cover 140. As an
8 alternative, the cooling fan may be placed in a central
9 portion or an upper portion of the shield cover 140 if
10 necessary." Did I read that correctly?

11 A. Yes, you did.

12 Q. So Kim discloses that the location of the fan unit
13 200 is a design choice, correct?

14 MR. SANDERS: Objection to form.

15 A. Can you clarify what you mean by a design choice?

16 Q. Kim discloses that the cooling fan 200 can be moved
17 to other locations of the shield cover, right?

18 A. Yes, he does.

19 Q. And so the person of ordinary skill in the art would
20 understand that the location of the cooling fan 200 is a
21 choice that that person of skill could make, right?

22 A. That is correct.

23 MR. SANDERS: Objection to form.

24 Q. In -- let's see. Okay. I think -- no. I think we
25 can do another reference. We'll move to another reference,

1 so --

2 A. Okay. sure.

3 Q. But I think -- are you still good? It hasn't been
4 an hour yet.

5 A. I'm good.

6 Q. Okay.

7 A. Thank you for asking.

8 Q. Can I have Kimura? Okay. I'm handing you Exhibit
9 [7]. This is U.S. Patent Application Publication number
10 2006/0199514 to Kimura, is that right?

11 A. That is correct.

12 Q. And is it okay if I refer to this patent application
13 as Kimura?

14 A. Yes.

15 Q. Okay. And for the record, this is also SEC Exhibit
16 1004 in IPR 2023-00220.

17 A. That is what it indicates.

18 Q. Okay. And we can also look at your 322 patent IPR
19 declaration, which is Exhibit [2], and I think we'll be around
20 paragraph 110.

21 A. Okay.

22 Q. So you dispute that Kimura's driving circuit 19 can
23 be a plate, is that correct?

24 MR. SANDERS: Objection to form.

25 A. That is correct.

1 Q. If we look at the 322 patent, claim one.

2 A. Yes.

3 Q. Claim one of the 322 patent recites a constricted
4 convection plate, right?

5 A. That is correct. On line sixty-three of column
6 nine.

7 Q. But -- and it recites a location requirement for
8 that plate, right?

9 A. It recites, "A constricted convection plate placed
10 posterior to the posterior display surface covering the
11 majority of the posterior display surface."

12 Q. But the claim does not otherwise recite any specific
13 requirements for the composition of the plate, right?

14 MR. SANDERS: Objection to form.

15 A. Again, the -- the claim states what it states, which
16 is a constricted convection plate.

17 Q. Okay. And it's the same for claim nine, right?

18 MR. SANDERS: Objection to form.

19 A. So I believe claim nine on column ten, line forty-
20 five states, "A constricted convection plate behind the
21 posterior surface of the display covering the majority of the
22 posterior display surface."

23 Q. So those are the only requirements for the
24 constricted convection plate that you just read, right?

25 MR. SANDERS: Objection to form.

1 A. That's what the claim states.

2 Q. Okay. Let's take a look at figure 9 of Kimura. I'm
3 in the wrong declaration. Okay. So do you agree that there
4 is air from the fan that flows between the driving circuit 19
5 and the backlight 18?

6 MR. SANDERS: Objection to form.

7 A. Are you referring to the figure 9 of the patent
8 application? I'm just --

9 Q. Yes. Figure 9 of Kimura.

10 A. So figure 9 of Kimura has arrows indicating in the
11 vertical direction, upward direction, indicating airflow, that
12 is correct.

13 Q. And that airflow is between components 19 and 18,
14 correct?

15 A. That's what the illustration shows.

16 Q. Okay. And component 19 is a driving circuit, right?

17 MR. SANDERS: Objection to form.

18 A. Yes, I see in page five of Kimura that it states
19 there a driving circuit 19 for the flat panel display. I do
20 see that, yes.

21 Q. Okay. Looking at figure 9, if the driving circuit
22 were to be removed from the display, would air fill the back
23 of the display cavity?

24 MR. SANDERS: Objection to form.

25 A. Could you be a little more specific about what you

1 mean by the back of the display cavity?

2 Q. Sure. So if we look at paragraph seventy-eight of
3 Kimura -- let me know when you're there.

4 A. I'm there.

5 Q. So Kimura discloses a display housing 16, correct?

6 A. Yes. I see on the very bottom of the last sentence
7 on page four, a display housing 16, yes.

8 Q. Okay. And if we look onto the next page, Kimura
9 discloses backlight unit 18, liquid crystal panel 17, and
10 cooling fan 20, right?

11 A. Yes, I see that.

12 Q. Okay. So looking back now to figure 9, we can see
13 identified components 16, 17, 18, 19, and we don't see a 20
14 actually, but I think we know where the fan is, right?

15 A. Okay.

16 Q. Okay. So if -- and you identified earlier that we
17 see arrows between 18 and 19, right?

18 A. Yes, I see that in figure nine. Yes.

19 Q. Okay. If driving circuit 19 were to be removed from
20 the display -- are you with me? -- would the location of the
21 arrows change?

22 MR. SANDERS: Objection to form.

23 A. So maybe if we refer to paragraph 112 in my
24 declaration, and there it says, "In particular when describing
25 figure 9, Kimura only references the backlight when discussing

1 the general 'film' of air that flows over and cools the
2 backlight. And specifically what Kimura said was by
3 circulating a wind generated by rotationally driving the
4 cooling fan 20 in the form of a 'film' to the rear surface of
5 the backlight unit 18, the entire backlit unit 18 is cooled
6 uniformly. Kimura in paragraph seventy-eight, see also
7 paragraph thirty (the fan generates a film of air to cool the
8 flat panel display)." It makes no reference to the driving
9 circuit 19 as contributing to the creation of any film of air
10 as proposed by the petition. Instead, Kimura's fan generates
11 such a film of air irrespective of the presence of the driving
12 circuit. And that's from Kimura paragraphs thirty and
13 seventy-eight. "Instead, it is my opinion that the driving
14 circuit is depicted as being positioned away from the
15 backlight, only to allow the film of air to flow over the
16 backlight unimpeded and does not constitute a constricted
17 convection plate." So in answer to your question, if you
18 remove 19, the arrows don't change because there is, according
19 to Kimura, a film of air that will travel over the backlight.

20 **Q. I'm almost afraid to ask this, but do you agree that**
21 **figure 9 illustrates a cross-section of a display?**

22 A. I believe on page two of Kimura, it indicates figure
23 9 -- this is paragraph thirty-nine -- figure 9 is a side
24 elevation of an internal construction showing the arrangement
25 of a cooling fan with respect to a flat panel display. Side

1 elevation is what Kimura refers to.

2 Q. And would you agree that a side elevation is -- is
3 what I would have thought before today that a person of
4 ordinary skill would have understood -- what we often say is a
5 cross-section?

6 A. I would agree that figure 9 would appear to be a
7 cross-section, even though it's referred to as a side
8 elevation in the patent.

9 Q. And in figure 9, the driving circuit 19 and the
10 backlight unit 18 have the same height, correct?

11 MR. SANDERS: Objection to form.

12 A. I think on page sixty -- this is, I believe,
13 paragraph 110, as it is about the top third of page 160 -- I
14 state, "Furthermore, as I discussed above and with respect to
15 Kim, nothing in Kimura's figures indicate as being drawn to
16 scale or otherwise representative of the actual dimensions or
17 sub -- sizes of components of its display device. Thus its
18 depiction in figure 9 only illustrates its relative
19 positioning."

20 Q. Understood. But looking at figure 9, you would
21 agree that components 19 and 18 are depicted as having the
22 same length, right?

23 MR. SANDERS: Objection to form.

24 A. I would again state that there's nothing indicating
25 that these figures are drawn to scale, so I can only deduce

1 from there the relative positioning of these components.

2 Q. Okay. But -- I understand. But looking at figure 9
3 itself, you would agree that as depicted in figure 9,
4 components 19 and 18 have the same length?

5 MR. SANDERS: Objection to form.

6 A. So figure 9 shows two rectangular shapes -- or one
7 rectangular shape and a rectangular shape with rounded
8 corners, and in the figure, they would appear to match.

9 Q. Okay. Thank you. Turning back to your opinion we
10 just talked about with the airflow, is it -- is it correct to
11 say that your opinion is that no air from the fan is reaching
12 the back of driving circuit 19?

13 MR. SANDERS: Objection to form.

14 A. Okay. I'm sorry, can you repeat the question,
15 please?

16 Q. Sure. Is it correct to say that your opinion is
17 that there's no airflow in the Kimura display as depicted in
18 figure 9 that reaches the back of driving circuit 19?

19 A. So I don't recall offering an opinion about airflow
20 on the other side of -- of the driving circuit 19.

21 Q. Okay. So you don't have an opinion one way or
22 another as to air is flowing behind driving circuit 19?

23 MR. SANDERS: Objection to form.

24 A. Again, as I've stated, I don't have an opinion.
25 I've not formulated an opinion. And again, from the

1 illustration of figure 9 and the arrows, there's no indication
2 from the arrows that there's airflow on the other side. And
3 from Kimura's description, there is a film of air created,
4 which would be a film of air whether there was a 19 or not.
5 So I have no opinion and would have to do additional analysis
6 to see if indeed there could be air flowing on the other side
7 of 19.

8 **Q. Okay. Let's turn to paragraph 117 of your 322**
9 **declaration. Is it correct that your opinion is that Kimura**
10 **does not disclose a means for forcing air as claimed in claim**
11 **nine because the fan does not directly abut the channel?**

12 **MR. SANDERS: Objection to form.**

13 **A. Okay. Can you repeat the question, please?**

14 **Q. Is it your opinion that Kimura does not disclose a**
15 **means for forcing air as recited in claim nine of the 322**
16 **patent because the fan does not directly abut the channel?**

17 **MR. SANDERS: Objection to form.**

18 **A. So I think as I've said in paragraph 117 on page**
19 **sixty-four, specifically the fan 52 in the 322 patent, "When**
20 **configured as a forcing fan, directly abuts the channel, 322**
21 **patent, figure 5C. Therefore, air propelled by the fan 52 can**
22 **only travel, for example, the air is forced into the**
23 **constricted convection channel defined by the constricted**
24 **convection plate and the posterior surface of the electronic**
25 **display." And then I go on to say, "However, Kimura's**

1 configuration includes a gap between the fan 22 and the
2 backlight unit 18. The presence of the gap in Kimura has the
3 potential to change the airflow significantly from that taught
4 by the 322 patent."

5 **Q. So your opinion is that Kimura does not disclose a**
6 **fan that directly abuts the channel, right?**

7 MR. SANDERS: Objection to form.

8 A. So my opinion is -- as stated in 118, is that Kimura
9 does not disclose or make obvious a means for forcing air
10 between the constricted convection plate and the posterior
11 surface of the electronic display.

12 **Q. Okay. You state that the presence of the gap in**
13 **Kimura has the potential to change the airflow significantly**
14 **from that taught by the 322 patent. Do you see that?**

15 A. Yes, I see that.

16 **Q. How -- how would the airflow be changed in Kimura as**
17 **compared to the 322 patent?**

18 A. So in order to know how the airflow would be
19 changed, I would need to do further analysis. With regard to
20 your question, the presence of the air gap would mean that the
21 fan of Kimura does not abut the channel. Does not directly
22 abut the channel.

23 **Q. And what do you mean by an air gap?**

24 A. So if I stated air gap, I apologize. That was a
25 misstatement. The presence of a gap -- and the gap is the

1 space that is indicated in figure 9 of Kimura -- directly to
2 the left of the first arrow closest to the fan.

3 **Q. So the gap is spaced between where the fan is**
4 **located and where the channel begins, is -- is that right?**

5 A. The gap is --

6 MR. SANDERS: Objection to form.

7 A. The gap is between what is indicated as item 21 in
8 the illustration and either item 19, if it's present, or item
9 16.

10 **Q. You said earlier that you didn't understand the**
11 **drawings in any patent to be the scale, right?**

12 A. To be the scale, I agree. Not to scale, that is
13 correct.

14 **Q. So you don't know -- to the extent there is a gap,**
15 **you don't know how large it would be, right?**

16 A. That is correct, but the drawings indicate there is
17 a gap. So the presence of that gap has the potential of
18 changing the airflow. And as I further state, the fan of
19 Kimura is a different fan than the fan that's in the 322
20 patent.

21 **Q. Where do you state that?**

22 A. I believe in paragraph 117, second sentence -- or
23 second line of the first sentence. "However, this overlooks
24 the fact that the positioning of the Kimura fan is different
25 than the fan 52 in the 322 patent." I believe I may have

1 misspoke, and -- in reference to that sentence on paragraph
2 117, "The positioning of the Kimura fan is different than the
3 fan 52 in the 322 patent."

4 **Q. Okay. Thank you. You agree that a fan is a means**
5 **for forcing air, correct?**

6 MR. SANDERS: Objection to form.

7 A. Can you repeat the question, please?

8 **Q. You agree that a fan is a means for forcing air,**
9 **right?**

10 A. So I think, as I indicated in paragraph 117, next to
11 last sentence on page sixty-four, "Therefore, air is propelled
12 by the fan. 52 can only travel -- i.e., the air is forced --
13 into the constricted convection channel." So a fan is a
14 device for moving air. Whether or not the air is forced, I
15 mean, if -- again, this is a question of a definition or
16 interpretation. You'd have to be more specific. But a fan
17 will move air, and whether or not it's forcing air would
18 depend on other -- other items that we would have to be more
19 specific on.

20 **Q. And you agree that Kimura discloses in figure 9 a**
21 **fan that moves air into a gap between the backlight 18 and the**
22 **driving circuit 19, right?**

23 A. I'm sorry. Can you repeat that question?

24 **Q. Yes. You agree that Kimura discloses a fan that**
25 **moves air into a gap between the backlight 18 and the driving**

1 circuit 19, right?

2 A. I -- if you can point to specific language in my
3 declaration you're concerned about. The reason I say that is
4 I specifically use in paragraph 117 the -- the word gap to
5 describe a gap that exists between the fan and potentially
6 item 19, the driving circuit. You're saying that Kimura is
7 intended to move air into the gap. I believe the intent of
8 Kimura is to have a film of air that would move along item 18,
9 which is not into the gap. But again, I'm confused --

10 Q. Okay.

11 A. -- by your question.

12 Q. I'll rephrase the question. You agree that Kimura
13 discloses a fan that moves air into the space between the
14 backlight 18 and the driving circuit 19, right?

15 A. So again, as I previously referred to on page sixty-
16 one, paragraph 112 -- and this is quoting Kimura. "By
17 circulating a wind generated by rotationally driving the
18 cooling fan 20 in the form of a 'film' to the rear surface of
19 the backlight unit 18, the entire backlight 18 is cooled
20 uniformly." So Kimura speaks of his fan creating a film, and
21 that film is directed to the rear surface of the backlight
22 unit 18.

23 Q. Now would you agree that Kimura's fan is a forcing
24 fan?

25 MR. SANDERS: Objection to form.

1 A. I don't know that I used the term forcing or forcing
2 fan with respect to Kimura in my declaration. If there's a
3 specific section you'd like to refer to, I'd be happy to
4 clarify.

5 **Q. Okay. I think it's a good time for a break.**

6 A. Okay.

7 COURT REPORTER'S NOTE: An off-the-record break was
8 taken from 11:24 a.m. until 11:38 a.m.

9 ON CONTINUED EXAMINATION CONDUCTED BY MS. NAOMI
10 BIRBACH:

11 **Q. Okay. Welcome back. Mr. Gershowitz, did you review**
12 **the PTAB's decisions instituting the 595 and 322 IPRs?**

13 A. Yes, I did.

14 **Q. Let's mark Exhibit [8]. Okay. I've handed you an**
15 **English translation of Korean Unexamined Patent Application**
16 **number 10-2006-0016469. Is that -- did I read that correctly?**

17 A. Yes, I believe you did.

18 **Q. Let's hope. And this is what we Petitioners, and I**
19 **believe you as well, refer to as the Na reference, is that**
20 **right?**

21 A. That's what it appears to be, yes.

22 **Q. And for the record, this is Exhibit -- SEC Exhibit**
23 **1010 in IPR 2023-00199.**

24 A. That's what's indicated on the page.

25 **Q. Okay, okay. So we're going to now be moving a few**

1 things around. So let's turn to your 595 declaration to
2 paragraph 117.

3 A. Okay.

4 Q. Okay. So the opinion that you state in paragraph
5 117 is that Na's bottom plate is not a constricted convection
6 plate because of the presence of through holes, is that right?

7 A. Yes. I believe that I state that in 117 about the
8 middle of the paragraph, "Because of the through holes formed
9 in Na's bottom plate, it is not a constricted convection plate
10 that defines a constricted convection channel due to the
11 numerous distinct entrances."

12 Q. Okay. And now let's take a look at figure 4 of the
13 595 patent.

14 A. Okay.

15 Q. And figure 4 shows an exemplary embodiment of the
16 595 patent invention, right?

17 A. That is correct.

18 Q. And the constricting convection plate in figure 4 of
19 the 595 patent includes numerous holes, right?

20 MR. SANDERS: Objection to form.

21 A. Are you referring to what is annotated as number 34?

22 Q. Yes.

23 A. I believe those are referred to as access apertures
24 and we can see that, for example, on column six, line twenty-
25 four, "As above, the constricted convection plate 30 may have

1 access apertures 34. The access apertures allow access to the
2 hardware located behind the constricted convection plate 30.
3 The access apertures 34 may be closed before use using plugs
4 or other similar devices, (not shown in the figure)."

5 **Q. Thank you. But you agree that the access apertures**
6 **are holes, right?**

7 MR. SANDERS: Objection to form.

8 A. I would agree that the access apertures are holes.

9 **Q. And air can flow through those holes in the --**

10 MR. SANDERS: Objection --

11 **Q. -- figure 4 embodiment, right?**

12 MR. SANDERS: Objection to form.

13 A. Air can flow through them if they are not plugged as
14 is suggested in line thirty -- excuse me, twenty-eight of the
15 specification that the access apertures may be closed before
16 use using plugs or other similar devices.

17 **Q. Right. But if they're not closed, air can flow**
18 **through the holes which are described as access apertures,**
19 **right?**

20 A. I would -- I would agree that air could flow through
21 unplugged access apertures.

22 **Q. Okay. Let's turn to paragraph 119 of your**
23 **declaration. The 595 declaration. I'm in the wrong**
24 **paragraph. Do you see in the last sentence that, "In the**
25 **context of the 595 patent, a posterior display surface is an**

1 exterior surface, not an interior one." Do you see that?

2 A. Yes, I do.

3 Q. Okay. Let's turn to the 595 patent, to column four,
4 line fifty-one. The specification of the 595 patent states
5 that, "In an exemplary embodiment, the display posterior 22
6 may be the posterior surface of a backlight assembly." Do you
7 see that?

8 A. Yes, I do.

9 Q. So you agree that the specification of the 595
10 patent indicates that the posterior surface may be the
11 posterior surface of a backlight assembly, right?

12 MR. SANDERS: Objection to form.

13 A. Could you repeat the question, please?

14 Q. You agree that the specification of the 595 patent
15 indicates that the posterior display surface can be the
16 posterior surface of a backlight assembly, right?

17 A. So as you read on lines 53, "In an exemplary
18 embodiment, the display posterior 22 may be the posterior
19 surface of a backlight assembly."

20 Q. Okay. And the posterior surface of a backlight
21 assembly could be an interior surface of a display, right?

22 MR. SANDERS: Objection to form.

23 A. I don't see where in the specification it says it
24 could be an interior surface. Could you point that out to me?

25 Q. It doesn't say that it can be an interior or

1 exterior surface, right?

2 MR. SANDERS: Objection to form.

3 A. It says it may be a posterior surface on the back of
4 an assembly.

5 Q. Right. But that doesn't indicate that it's an
6 interior or an exterior surface, right?

7 A. So I believe in figure 1, and figure 2, and in
8 figure 4, all of which indicate figure 1 is in column three.
9 It stated, "Perspective view of display that may be used as an
10 exemplary embodiment." Figure 2 is a posterior view of a
11 display that may be used an exemplary embodiment. Figure 4,
12 exploded view of display may be used exemplary embodiment,
13 exemplary embodiment of constricted convective plate. All of
14 these illustrations, all of the specifications show a display
15 as a complete assembly. And when they're referring to the
16 posterior surface, it's the external surface of the display.

17 Q. But the specification of the 595 patent nowhere
18 states that the posterior display surface must be an external
19 surface, right?

20 MR. SANDERS: Objection to form.

21 A. Again, I don't believe that there is a statement
22 that it is an exterior or an interior. But all of the
23 illustrations, all of the figures, and the understanding of a
24 POSITA would be that it is an external surface.

25 Q. Okay. Let's look at paragraph -- let's turn to

1 paragraph 132 of your declaration.

2 A. Is this of my 595 declaration?

3 Q. Yes.

4 A. Okay.

5 Q. Okay. At the end of the paragraph, you state a
6 position that Na teaches away from access apertures, is that
7 correct?

8 A. Yes, I see that in my declaration. It -- it
9 actually states, "Thus, it teaches away from embodiments where
10 such through holes are repositioned or resized." Is that what
11 you're referring to?

12 Q. Yes. But access apertures allow air flow, right?

13 MR. SANDERS: Objection to form.

14 A. I think as I previously stated, access apertures
15 that have not been plugged will allow air flow, but the intent
16 of the access aperture is to allow servicing of components
17 that are beneath the -- the convective -- yeah, a constricted
18 convection plate. I apologize.

19 Q. You see that in this -- earlier in this paragraph,
20 that the through holes, disclosed or not, are small holes. Do
21 you see that?

22 A. I'm sorry, where are you referring to?

23 Q. Earlier in this paragraph that we're looking at,
24 132. The second sentence. You say on this page, seventy-
25 three, you say, "The through holes disclosed in Na are small

1 holes." Do you see that?

2 A. Yes, I do.

3 Q. If we look at Na's figure -- look at the exhibit.

4 [8], I believe. The holes in -- you know, that we see
5 throughout Na's displays are larger than the holes that we see
6 in the embodiment shown in figure 4 of the 595 patent, right?

7 MR. SANDERS: Objection to form.

8 A. Could you repeat the question, please?

9 Q. I believe the question was you would agree that the
10 holes depicted in Na's plate are actually larger than the
11 access apertures in the embodiment shown in figure 4 of the
12 595 patent, correct?

13 MR. SANDERS: Objection to form.

14 A. So as I previously stated, the diagrams are not to
15 scale, and therefore it's hard to deduce smaller or larger.
16 What I would comment is, as I referred to in paragraph 123 of
17 my report on page sixty-nine, the purpose of the holes in Na
18 is quite different than the purpose of the holes in the 595
19 patent in terms of -- as I state there, "Here the proposed
20 constricted convection plate includes multiple through holes
21 that provide access to the interior display, assembly, and all
22 air to flow into the cooling chamber formed on the interior of
23 Na's device." So Na, page four, "Air may move through the
24 holes 212 in the present exemplary embodied function as air
25 intake through which external air is sucked." So in the Na

1 invention, the purpose of the holes is solely for that of
2 allowing air to be -- external air to be sucked or moved
3 through the holes. Whereas in the 595 patent, the purpose of
4 the holes are access apertures for servicing, not for air to
5 be sucked or otherwise moved through the holes.

6 **Q. You have not identified any statement in Na that**
7 **access apertures, as you just described, would be undesirable,**
8 **right?**

9 MR. SANDERS: Objection to form.

10 A. So I think as I've stated already on my page
11 seventy-three, paragraph 132, Na has no discussion regarding
12 servicing internal components. So therefore the notion of an
13 access aperture which is to service internal components is not
14 something that Na teaches or describes.

15 **Q. So Na does not identify -- or I'll rephrase that.**
16 **You have not identified any statement in Na that access**
17 **apertures would be undesirable, right?**

18 A. Na is silent about access apertures. Na states that
19 holes for the movement of air are desirable and necessary for
20 his invention to work.

21 **Q. Okay. Let's turn to your other declaration, the 322**
22 **declaration which is Exhibit [2]. And to paragraph 133 on**
23 **page seventy-two.**

24 A. That was 133?

25 **Q. Yes. You state in the second sentence that Kimura**

1 does not describe the nature of the substrate any LEDs are
2 mounted to, nor does Kimura discuss the configuration of its
3 LEDs. Do you see that?

4 A. Yes, that's on the third line from the bottom of
5 page seventy-two.

6 Q. You agree though that the LEDs would need to be
7 mounted to a substrate, right?

8 A. I would agree that conventional practice would be to
9 mount the LEDs to a substrate. There could be other mounting
10 methods that do not involve a substrate, but conventional
11 means would be to a substrate.

12 Q. And conventionally, the LEDs would be mounted to a
13 PCB, right?

14 MR. SANDERS: Objection to form.

15 A. Again, a PCB, a metal-fed PCB, some electrically
16 conductive -- you know, something that has electrically
17 conductive connections or interconnect as well as mechanical
18 support.

19 Q. Okay. And that would have been the person of skill
20 in the arts' understanding around 2008, right?

21 A. That is correct.

22 Q. Okay. You understand that there is a related ITC
23 proceeding on these same patents that you have offered
24 opinions on in the IPRs?

25 A. That is my understanding.

1 **Q. Okay. And you under -- or are you aware that MRI**
2 **had an expert, Mr. Credelle, offer opinions in the ITC**
3 **proceeding on the 595 and 322 patents?**

4 A. I'm not aware of Mr. Credelle or his opinions, nor
5 have I considered them in my analysis.

6 **Q. Okay. So you did not review Mr. Credelle's expert**
7 **reports from the ITC proceeding on the 595 and 322 patent**
8 **invalidity?**

9 A. There were many documents that I ref -- that I've
10 reviewed. I do not recall having referred -- having reviewed
11 any material from Mr. Credelle, and I don't specifically
12 recall Mr. Credelle's name.

13 **Q. Credelle.**

14 A. Credelle. I apologize. Okay. Mr. K.

15 **Q. It's actually a C. It's a C. It's Credelle with a**
16 **C. Are you aware that the ALJ in the ITC proceeding recently**
17 **issued an initial determination?**

18 A. So I'm aware from discussion in -- with counsel that
19 there was an initial determination. I don't know the
20 specifics. I've not reviewed that determination, nor have I
21 discussed in depth what that determination was about.

22 **Q. Okay. And did you review any of MRI's briefs from**
23 **the ITC proceeding?**

24 A. Again, there were a large number of documents that
25 I've reviewed. I believe they were all related to the IPR. I

1 know there was mention of the ITC case. I don't specifically
2 recall reviewing any documents of the ITC case. So I don't
3 recall having reviewed them. It's possible I could have, but
4 I -- I don't think so.

5 Q. Okay. I think you did review, and you can correct
6 me if I'm wrong -- I'll actually just take a double check at
7 your exhibit. I believe you reviewed --

8 A. It would be in the exhibit list, which is what I
9 should refer to.

10 Q. Okay. So I think you did review Mr. Smith-
11 Gillespie's testimony from the ITC proceeding, that's exhibit
12 2013.

13 A. Okay. So there's a series of documents -- I'm
14 referring to the exhibits that I've looked at here.

15 Q. Okay.

16 A. There are a series of documents that are related to
17 the ITC investigation. It appears Exhibit 2004, 2005, 2000 --
18 and these are specifically for 322. So -- so I stand
19 corrected. These are documents that I did re- -- as I said --

20 Q. Yeah.

21 A. -- there's a large number of documents. I should
22 have referred first to my, you know, my citations here. So
23 the documents that are listed here have been reviewed by me
24 and they are related to the ITC case.

25 Q. Okay. And is that the com -- that is -- did you

1 review any other documents related to the ITC case that are
2 not reflected in the exhibit list in your declaration?

3 A. No, I did not.

4 MS. BIRBACH: Okay, okay. Let's take a quick break.

5 COURT REPORTER'S NOTE: An off-the-record break was
6 taken from 12:01 p.m. until 12:06 p.m.

7 MS. BIRBACH: Okay. Thank you for your time today,
8 Mr. Gershowitz. I do not have any further questions subject
9 to any redirect.

10 MR. SANDERS: I don't have any redirect questions.

11 MS. BIRBACH: Okay. Great. Thank you.

12 MR. GERSHOWITZ: You're welcome.

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14 THE DEPOSITION CONCLUDED AT 12:06 P.M.

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1 UNITED STATES PATENT AND TRADEMARK OFFICE
2 CAUSE NO. IPR2023-00220
3 UNITED STATES PATENT NO. 9,173,322
4 SAMSUNG ELECTRONICS CO., LTD.)
5 AND SAMSUNG ELECTRONICS)
6 AMERICA, INC.,) D-E-P-O-S-I-T-I-O-N
7 PETITIONERS,) OF
8 V.) MICHAEL NEAL GERSHOWITZ
9 MANUFACTURING RESOURCES)
10 INTERNATIONAL, INC.,)
11 PATENT OWNER.) SIGNATURE PAGE
12 = = = = =
13
14 I, MICHAEL NEAL GERSHOWITZ, DO HEREBY CERTIFY THAT I
15 HAVE READ, OR HAVE HAD READ TO ME, THE FOREGOING DEPOSITION
16 GIVEN BY ME ON NOVEMBER 30, 2023, BEFORE AIMEE RIGSBY, A
17 COURT REPORTER AND NOTARY PUBLIC IN AND FOR THE COUNTY OF
18 PITT.
19 (A) SAID DEPOSITION IS CORRECT AS IS AND REQUIRED NO
20 CHANGES.
21 (B) I DESIRE THAT THE CHANGES ATTACHED HERETO,
22 DESCRIBED ON THE "ERRATA SHEET TO DEPOSITION OF "MICHAEL
23 NEAL GERSHOWITZ," BE INCORPORATED INTO SAID DEPOSITION
24 TRANSCRIPT.
25 WITNESS, MY HAND AND SEAL, ON THIS, THE _____
DAY OF _____, 2023.

MICHAEL NEAL GERSHOWITZ (SEAL)

1 CHANGES AND SIGNATURE

2 WITNESS NAME: Michael Neal Gershowitz, 11/30/2023

3 PAGE LINE CHANGE REASON

4 _____

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15 _____

16 I, Michael Neal Gershowitz, have read the foregoing
17 transcript and hereby affix my signature that same is
18 true and correct, except as noted above.

19

20 _____

21 Michael Neal Gershowitz

22 Sworn to and Subscribed before me

23 _____, Notary Public.

24 This_____day of _____, 20____.

25 My Commission Expires:

	60:16	37:4, 8, 15,	42:5, 14
Exhibits	1005 32:23	24 38:3, 22	43:10, 14
GershowitzM 1	1010 72:23	39:10, 14,	44:17, 23,
3:3	106 54:16,	20 40:16,	25 45:22
GershowitzM 2	19	23 41:8,	46:13, 25
3:5	108 55:25	11, 17, 21,	47:9
GershowitzM 3	56:2, 22	23 42:5,	57:17, 20
3:6	10:03 32:11	10, 23	58:3, 17
GershowitzM 4	110 60:20	43:10, 14	59:7, 9
3:7	65:13	45:21	16 11:18
GershowitzM 5	112 63:23	47:1, 6	12:2
3:9	71:16	50:4	14:10, 14,
GershowitzM 6	117 37:18	57:14, 22	16, 20
3:10	42:18	58:4, 8, 16,	15:5, 9, 17,
GershowitzM 7	67:8, 18	19	19, 22
3:11	69:22	131 33:6	20:15
GershowitzM 8	70:2, 10	35:24 36:4	63:5, 7, 13
3:12	71:4 73:2,	38:12, 13,	69:9
	5, 7	17, 23	160 65:13
		39:4, 6, 13,	17 14:10,
		15 40:6, 7	14, 16, 20
		58:13	15:5, 9, 17,
1	118 68:8	132 77:1, 24	19, 22
1 4:23	119 74:22	79:11	20:15
11:19 12:3	11:24 72:8	133 38:11,	63:9, 13
13:15 15:6	11:38 72:8	12, 13, 17	18 62:5, 13
17:17	123 78:16	39:9, 12, 16	63:9, 13, 17
20:15	12:01 83:6	40:9	64:5
54:17	12:06 83:6,	58:10, 22	65:10, 21
76:7, 8	14	79:22, 24	66:4 68:2
10-2006-	130 33:5	135 58:23	70:21, 25
0016469	35:6, 16,	140 35:6, 16	71:8, 14,
72:16	18, 23	37:7, 15, 24	19, 22
1002.086	36:4, 12,	38:3, 11	19 11:18
58:13	13, 14	40:15, 21	12:1 60:22
1004 9:23		41:8, 10, 17	62:4, 13,

16, 19	2004	82:17	32	24:8	22:1, 3, 5,
63:13, 17,	2005	82:17	322	47:21	14 24:7
19 64:9, 18	2006/0199514		48:5 49:6,	30:25	31:2, 5, 12,
65:9, 21	60:10		11, 22 57:5	18, 23	32:1, 14
66:4, 12,	2008	52:12,	60:18	61:1, 3	34:15, 16,
18, 20, 22	18	53:1, 7,	67:8, 15,	19, 20	19, 21, 23
67:4, 7	15, 19, 25		68:4, 14, 17	35:18	36:1, 8, 13,
69:8 70:22	54:4 80:20		69:19, 25	16, 23	37:2, 8, 12
71:1, 6, 14	2013	82:12	70:3 72:12	38:9 39:6,	17, 20
	2023	4:19,	79:21	40:1, 3, 13,	19 42:11,
2	20		81:3, 7	14 44:23	45:25
2 33:14, 17	2023-00199		82:18	46:6, 16	59:1, 2, 6
35:20	4:24 9:23		34 16:20	51 28:9, 15,	23
43:3, 23	32:23		73:21	52 23:20	24:10
44:1, 12, 13	72:23		74:1, 3	67:19, 21	69:25
45:4, 12, 19	2023-00220			70:3, 12	53 19:2, 4,
47:4, 23	60:16		4	7, 13, 14	20:13
48:1, 9	21 69:7		4 9:19 15:2	28:1, 13, 24	75:17
49:4 50:5	210 33:22		22:23, 25	54 28:8, 14	29:2, 3
57:6, 11	34:10		23:4 49:1	55 20:8	24:7
58:1, 7	212 78:24		73:12, 15,		
59:6 60:19	22 68:1		18 74:11		
76:7, 10	75:5, 18		76:8, 11		
79:22	250 58:11		78:6, 11		
20 63:10, 13	260 58:11		46 23:14		
64:4 71:18			466 24:7		
200 33:19,	3		47 23:14		
25 34:3, 5,			5		
6, 24 35:3,	3 6:23		5 18:22		
5, 15 37:6	30 17:20		19:15		
42:18	18:6 73:25		21:14, 17		
59:6, 13,	74:2				
16, 20					
2000 82:17					
2003/0043091					
9:20					

55A 28:12		abuts 67:20	25:11, 18
29:4 31:21	<u>7</u>	68:6	44:8 45:20
55B 20:12	7 60:9	AC 13:12	46:25
28:12 29:4	7,800,706	access 16:1,	47:5, 9, 11,
31:22	32:16	10,13,19,	18
56 21:17,	706 41:3	24 17:5,	adopted 6:9
20,22 22:1		10,18,19,	affirmative
31:14	<u>8</u>	25 18:5,	8:4
595 6:21		10,15,17	AFFIRMED 4:1
7:2,4,22	8 72:14	73:23	affixed
8:6 9:3	78:4	74:1,3,5,	58:22
13:23 14:2	8,854,595	8,15,18,21	afraid 7:15
16:1,9,13,	6:25	77:6,12,	64:20
18,24		14,16	agree 9:12
17:4,9,18,	<u>9</u>	78:11,21	10:24
25 18:13,		79:4,7,13,	11:10,22
20 21:2,4	9 62:2,7,9,	16,18	13:10
23:24	10,21	acknowledge	15:5,8,9,
24:3,6,7,	63:12,25	58:18	16,17,18,
12,20 25:9	64:21,23	actual 65:16	22 16:12
54:17	65:6,9,18,	add 53:8	19:6 20:19
56:2,22	20 66:2,3,	added 42:11	22:12,16
72:12	6,18 67:1	adding 52:24	24:20,24
73:1,13,	69:1 70:20	additional	25:4 26:8
16,19	9,173,322	16:6 17:20	29:1,18,19
74:23,25	48:2 49:13	18:6 20:12	30:4 33:8,
75:3,4,9,	9:55 32:11	26:9 49:3	11 34:19,
14 76:17		50:5 67:5	21 35:24
77:2 78:6,	<u>A</u>	address	36:8 37:6,
12,18 79:3		58:16	13 38:10
81:3,7	a.m. 32:11		40:13
5C 67:21	72:8	adjacent	41:2,12
	abut 67:11,	7:23 8:3,	42:3,11
<u>6</u>	16 68:21,	10,15,19	44:19
6 49:13	22	9:3,9	46:24
			47:17

48:17	38:2, 10	16, 18	45:25 46:3
52:4, 8, 15	40:14	69:18	48:8, 11
53:14, 24	41:12, 15,	albeit 39:20	49:4 50:5
55:1, 12	16, 22	ALJ 81:16	57:11 58:1
57:20 58:2	42:4, 15,		73:21
62:3 64:20	17, 22	alleged	annotation
65:2, 6, 21	45:21	44:11	22:8 36:14
66:3 69:12	62:4, 22	50:2, 7, 22	37:5
70:4, 8, 20,	64:1, 7, 9,	51:9 52:2,	40:19, 23
24 71:12,	11, 15, 19	4	42:10, 11
23 74:5, 8,	66:11, 22	allowed	44:10, 16
20 75:9, 14	67:3, 4, 6,	18:16	45:3 49:4
78:9 80:6,	10, 15, 21,		
8	22 68:9,	allowing	annotations
air 18:1, 9,	20, 23, 24	27:17 79:2	23:14
10, 16, 20	70:5, 8, 11,	alongside	37:10 38:6
19:14, 16,	12, 14, 17,	49:2 50:4	41:2 44:17
17, 18, 20,	21, 25	alternative	51:8
21, 24, 25	71:7, 8, 13	59:8	aperture
20:4, 7, 12,	74:9, 13,	ambient	18:21
14, 19	17, 20	20:4, 7, 14	77:16
21:8, 19, 25	77:12, 15	27:17	79:13
22:5	78:22, 23,	29:20	apertures
23:10, 14	24, 25	30:3, 6, 19,	16:1, 10,
24:4, 13	79:2, 4, 19	22	14, 19, 25
25:15 26:9	airflow	analysis	17:5, 10,
27:17	17:20 18:7	67:5 68:19	18, 25
28:1, 22, 23	20:3, 17, 24	81:5	18:4, 10,
29:2, 3, 5,	22:13, 16	annotated	11, 14, 15,
12, 13, 14,	23:4, 21, 25	18:23	17 73:23
20 30:3, 6,	24:5, 9, 19,	35:18	74:1, 3, 5,
11, 15, 19,	22 25:3, 6	36:23, 25	8, 15, 18, 21
22 31:12,	31:20	37:1 40:18	77:6, 12, 14
13, 16, 17,	42:12	42:7 43:1,	78:11
23 34:11,	62:11, 13	3, 18, 23	79:4, 7, 17,
12 35:5, 15	66:10, 17,	44:1, 6, 7, 8	18
37:6, 16,	19 67:2		apologize
17, 23	68:3, 13,		

26:13	arrows	22:8,	14:24 15:2	48:25 49:2
68:24	12	23:7	19:1 20:14	50:4 52:5,
77:18	31:12, 19		23:16	9 55:2
81:14	35:1 42:12		30:25	57:14, 21
apparatus	62:10		39:17	58:4, 8, 12,
56:18	63:17, 21		43:16 45:2	16, 19 62:5
apparent	64:18		46:17	63:9, 25
14:24	67:1, 2		54:15	64:2, 5, 15,
45:19 47:4	art 5:4, 7,		58:24	16, 19
appeared	15, 21, 23		62:22	65:10 68:2
44:6	6:6 12:15		63:1, 12	70:21, 25
appears 23:3	30:5 53:1,		66:9, 12, 18	71:14, 19,
37:1	7 59:19		72:11 76:3	21 75:6,
40:19, 24	arts 80:20	background		11, 16, 19,
58:2 72:21	assembled	6:15		20
82:17	43:17	backlight		backlights
application	assemblies	13:24		14:3
9:20, 22	13:24	33:1, 5		backlit 64:5
54:23	assembly	35:6, 16,		based 23:7,
55:17	58:19	23, 25		13 35:1
60:9, 12	75:6, 11,	36:4, 8, 11,		38:6 49:15
62:8 72:15	16, 19, 21	13, 16		55:9
applies	76:4, 15	37:4, 8, 15,		battery-
39:12	78:21	24 38:3,		operated
apply 30:17	assisted	17, 22		13:12
area 8:23	24:9	39:2, 10,		beginning
26:18	assume 40:5	14, 16, 17,		4:16
arranged	attach 52:5	19, 23, 24,		begins 69:4
20:13	avoid 54:22	25 40:2, 4,		beneath
28:8, 12	aware 81:1,	5, 7, 9, 15,		77:17
arrangement	4, 16, 18	23 41:8,		benefit
64:24		11, 17, 21,		53:22
arrow 23:13		22 42:5, 9,		benefits
69:2		10, 22		55:12, 16
		45:6, 14, 21		
		46:13		
		47:1, 5		
	B			
	back 13:15			

BIRBACH 4:3	83:4, 5	78:22	65:9
32:13	briefs 81:22	change 6:8	66:12, 18,
72:10	bring 55:19	63:21	20, 22
83:4, 7, 11	broad 52:20	64:18	70:22
bit 45:24	53:3	68:3, 13	71:1, 6, 14
47:24		changed	circular
blades 35:2	c	68:16, 19	27:8
blue 20:4	careful	changing	circulating
58:22	22:11	69:18	45:22 64:3
board 39:9,	case 27:9	channel 7:23	71:17
12 58:10,	55:7 82:1,	8:17 9:11	circumstances
22	2, 24 83:1	16:6 17:21	55:13
bottom 19:6,	cavity 62:23	18:2, 8	citations
17 23:5, 8	63:1	21:3 23:5,	82:22
32:24	center 19:18	10 24:6	cited 58:7
45:18 63:6	central	25:13, 19,	clad 55:19
73:5, 9	59:7, 8	21 31:24	claim 7:4, 8,
80:4	cetera 12:5	37:17	11, 18, 19,
bracket 48:5	chamber	67:11, 16,	22 8:1, 6
49:22, 24	19:20, 24	20, 23	9:1, 3, 7, 16
50:2, 18, 22	20:6, 8, 18,	68:6, 21, 22	17:4, 7, 9,
52:2, 21, 22	20 21:9,	69:4 70:13	12, 15
brackets	14, 19, 22	73:10	21:2, 4
48:12, 15,	22:1, 14	check 82:6	25:8, 9, 10,
17, 18, 23	25:24	choice 57:1,	17 49:1,
49:2, 5, 7,	26:5, 10,	2 59:13,	14, 21, 23
14, 17	16, 18, 19,	15, 21	50:9, 17, 18
50:3, 7, 10,	23 27:1, 3,	circuit	51:9 52:1
24 51:4, 7,	18, 21, 24	12:25	61:1, 3, 12,
9, 13, 19, 25	28:22	39:9, 12	15, 17, 19
52:4, 11,	29:6, 15, 19	58:10, 22	62:1
15, 17, 24	30:4, 16	60:22	67:10, 15
53:8, 11	31:18, 20	62:4, 16,	claimed
break 32:6,	46:7, 10	19, 21	50:11 51:1
10 72:5, 7		63:19	67:10
		64:9, 12, 14	

claims 7:2	column 16:18	11:11, 14	CONCLUDED
23:24	25:10	14:10	83:14
24:11, 12,	33:4, 23	15:9, 12	CONDUCTED
16, 20, 24	34:2, 4, 9,	33:11	4:3 32:12
25:5, 14	18 35:22	39:23	72:9
clarification	36:12	43:22, 25	conductive
29:17 44:3	38:20, 24	44:5, 19, 22	80:16, 17
clarifications	39:8 41:3,	45:4, 12	configuration
24:18	14, 20, 25	46:2, 6	68:1 80:2
clarify	49:22	48:11, 14	configured
28:21	56:12, 17	49:5, 16	67:20
35:12 46:9	59:2, 4	50:24	confirm
48:20	61:5, 19	51:12, 19	51:20
51:6, 17	73:24 75:3	58:2 62:13	confuse
59:15 72:4	76:8	63:13	29:16
closed 16:2,	combination	65:17, 21	confused
7, 14, 20,	29:14, 15	66:1, 4	54:15 71:9
22, 25	combined	77:16	connect
17:3, 13	39:9, 14	79:12, 13	48:23
74:3, 15, 17	comment 53:4	composition	49:8, 17
closely	78:16	61:13	50:25
46:11	commercially	comprise	51:10 52:9
closest 69:2	53:18	56:19	connected
closing	compared	comprises	47:18 50:7
16:10	68:17	33:5 35:23	52:3
coarse 28:8,	complete	38:22 39:2	connections
14 29:1, 2,	76:15	comprising	80:17
8, 25	component	49:24	connects
30:11, 12	19:2 36:14	compromised	49:24
color 40:20	37:3 46:12	16:6	50:18, 22
colored 24:8	47:18, 19	computer	considered
43:22, 25	58:11	56:9, 16, 19	81:5
44:5	62:16	57:3	constitute
57:15, 22	components	concerned	
	5:13 10:25	29:11 71:3	

64:16	contrast	77:17	64:4, 25
constricted	19:4 24:3	convention	71:18
7:23 8:1,	contributing	24:6	78:22
3, 10, 15,	64:9	conventional	cools 64:1
16, 20 9:4,	control	55:5 56:6	copy 6:24
7, 9, 10	13:1, 5	80:8, 10	core 53:14,
16:5 17:6,	controller	conventionally	18, 22, 23,
10, 19, 21	58:11	80:12	25 54:3, 7
18:6, 7	controlling	cool 20:14	55:1, 4, 7,
24:6	12:4	21:19 64:7	13, 15, 18,
25:11, 12,	controls	cooled 64:5	19, 21
19, 21 44:8	39:13	71:19	corners 66:8
49:9, 18, 25	convection	cooling 7:5,	correct 4:8,
50:19, 25	7:23 8:2,	8 19:20, 24	22 5:5, 6
61:3, 9, 16,	4, 10, 15,	20:6, 8, 10,	6:19, 20
20, 24	16, 20 9:4,	18, 20	7:9, 13, 21
64:16	7, 9, 11	21:9, 14,	9:14, 20,
67:23	16:5 17:6,	19, 22, 25	21, 24
68:10	11, 20, 21	22:14	10:5, 11,
70:13	18:6, 7	25:24	19, 20, 25
73:5, 9, 10,	25:11, 13,	26:5, 10,	14:5, 9
25 74:2	19, 21 44:9	16, 18	16:25
76:13	49:9, 18, 25	27:3, 17, 21	17:11, 13
77:17	50:19, 25	28:22	19:2, 7, 13,
78:20	61:4, 9, 16,	29:6, 19	15, 21
constricting	20, 24	30:4, 15	20:1, 20
24:5 73:18	64:17	31:6, 18, 20	21:3, 4, 9,
construction	67:23, 24	33:19, 22	14, 17, 18,
64:24	68:10	34:3, 5, 6,	20, 21, 23,
contamination	70:13	10, 11, 12,	24 22:1, 4,
27:17	73:5, 9, 10,	18 41:16,	6, 17, 19
context	18, 25 74:2	22 46:7, 10	23:1, 3, 5,
51:25	77:18	54:23	9, 11, 15,
74:25	78:20	55:2, 16	21, 23, 25
CONTINUED	convective	59:6, 8, 16,	24:14
32:12 72:9	76:13	20 63:10	25:15, 25

26:6, 13, 16, 19, 24 28:18, 24 30:7 31:3, 18, 19, 25 32:16, 17, 18, 19 33:1, 15, 18, 19 34:4, 7, 16, 24 35:6, 16 36:24 37:8, 18, 20 38:4, 8, 12 39:4, 18 40:8, 16 41:8, 18 42:19, 23, 24 43:3, 11, 20, 21 46:1, 7 47:7, 16 48:9, 10, 12 52:6, 18 53:15, 19 54:4 55:2, 23 59:13, 22 60:11, 23, 25 61:5 62:12, 14 63:5 65:10 66:10, 16 67:9 69:13, 16 70:5 73:17 77:7 78:12 80:21 82:5	corrected 34:4 82:19 correctly 59:10 72:16 cost 55:6, 19 costly 55:5 counsel 43:9 81:18 Court 32:10 45:11 72:7 83:5 cover 28:9, 15, 23 30:10 35:16 37:7, 15 38:3, 11 40:15, 21 41:8, 10, 17 42:5, 14 44:14, 17, 22, 25 45:22 46:13, 25 47:9, 12, 19 52:5, 9 57:17, 20 58:3, 17 59:7, 9, 17 covered 57:17 covering 61:10, 21	create 43:5, 6 created 43:7, 8 67:3 creating 71:20 creation 64:9 Credelle 81:2, 4, 11, 13, 14, 15 Credelle's 81:6 Credelle's 81:12 cro- 34:15 cross-section 31:2, 9, 11 32:1 34:16, 20, 22 36:7 64:21 65:5, 7 crystal 63:9 D dashed 35:1 49:3 50:5 dealing 49:21 decision 55:8	decisions 72:12 declaration 4:24 6:13, 15 13:16 17:17 18:23 23:16 30:22 31:2 36:20, 24 42:25 43:19 44:2, 4 45:1 47:22 48:2 49:15, 20 51:5, 16 54:16, 17 56:1, 2, 23 57:5, 8 60:19 62:3 63:24 67:9 71:3 72:2 73:1 74:23 77:1, 2, 8 79:21, 22 83:2 deduce 65:25 78:15 defined 67:23 defines 73:10 defining 8:16 9:10 definition
--	--	---	---

5:20 6:5, 9,10 70:15	design 20:7 52:21 54:6 55:8 59:13, 15	78:14 dictate 53:21	16:10 27:20 67:10, 14 68:5, 9
degree 27:2	designated 9:23	difference 31:8, 10	disclosed 14:2 23:20
depend 55:17 70:18	designed 17:18 18:5	dimensions 27:7 65:16	41:25 77:20, 25
depending 34:13	designer 54:7	diode 33:6	discloses 10:5 11:22
depicted 64:14 65:21 66:3, 17 78:10	designs 53:21, 23	diodes 35:24 38:23 39:3	22:12, 18 25:23 26:4, 15 28:17 30:2 32:25 55:21
depiction 65:18	desirable 79:19	direct 9:13 directed 71:21	56:8, 15 59:12, 16 63:5, 9 70:20, 24 71:13
deposed 4:8	determination 81:17, 19, 20, 21	direction 22:5, 9, 13 24:4 25:3 34:14 43:7 46:20 62:11	discretion 54:7
DEPOSES 4:2	determined 46:19	directionally 42:17	discuss 80:2
DEPOSITION 83:14	device 12:23 13:6, 10 14:25 15:3 31:6 55:6, 7 56:5, 23 65:17 70:14 78:23	directly 67:11, 16, 20 68:6, 21 69:1	discussed 13:23 15:1 31:17 44:15, 23 65:14 81:21
depth 81:21	devices 5:12 16:21 74:4, 16	disagree 46:5 discharge 34:12	discusses 41:14
describe 6:17 27:23, 25 71:5 80:1	diagram 37:1 42:7 43:13 45:19 47:4	disciplines 52:16 53:12, 13	discussing 63:25
describes 11:4, 6 13:13 24:3 26:17 79:14	diagrams	disclose	discussion
describing 46:24 63:24			
description 67:3			

52:1 79:11	54:7 55:6	39:25 40:2	11:23 12:9
81:18	56:8, 15, 18	50:9, 23, 24	driving
discussions	61:10, 11,	distinct	10:17, 21
43:8	21, 22	73:11	11:6, 7, 17
displacement	62:19, 22,	doctrine	12:1, 6
12:4	23 63:1, 5,	50:14	60:22
display 7:5,	7, 20 64:8,	documentation	62:4, 16,
9, 11, 19, 24	21, 25	27:4	19, 21
8:2, 16, 20	65:17	documents	63:19
9:4, 8, 10	66:17	40:24	64:3, 8, 11,
10:5, 8, 10,	67:25	81:9, 24	13 65:9
17, 22, 24	68:11	82:2, 13,	66:12, 18,
11:4, 11,	74:25	16, 19, 21,	20, 22
18, 20, 23	75:5, 15,	23 83:1	70:22, 25
12:2, 4, 11,	18, 21	don't 11:7	71:6, 14, 17
16, 17 13:1	76:9, 11,	21:5 26:15	due 73:10
14:10, 17,	12, 14, 16,	76:21	DULY 4:1
21 15:3, 19	18 78:21	81:11	
25:12	displays	double 82:6	E
27:16 30:6	5:16, 19, 21	draw 34:11	earlier
31:24	6:1, 2, 17	drawing	17:16
32:25	13:23, 25	37:16	21:13 34:2
33:8, 15, 17	14:2, 3	46:21	35:22
34:16	52:18	drawings	63:16
36:16	53:9, 19, 25	69:11, 16	69:10
37:22 38:2	54:4, 8, 10,	drawn 65:15,	77:19, 23
40:12, 14	14 78:5	25	early 4:17,
41:25	dispute	draws 35:5,	19, 20
42:2, 4	25:23	15 41:16	edge 15:2
43:17	26:4, 15	driver	edges 44:14,
44:9, 14,	48:14, 18	12:20, 22,	17, 22, 24
17, 22, 25	49:7, 15	24, 25	45:4, 13
45:5, 13	52:11	drivers	46:25
46:25	55:20, 23		education
49:17	60:22		6:18
51:10	disputing		
52:21, 24	21:7 36:15		

efficient 55:2	52:12, 18, 21 67:24 68:11	26:19, 22, 23 27:2, 5, 7, 9	examination 4:3 22:11 32:12 72:9
eight-one 23:17	electronics 11:6, 7 12:5, 7, 10, 14	end 77:5 English 72:15	excessive 55:10
Eighty 23:17	element 19:4	enter 18:10 27:17	excuse 25:21, 22 30:11 45:8 74:14
eighty- 26:13 27:12	elements 43:10, 14, 16	28:1, 22 29:5 30:4	exemplary 56:20 73:15 75:5, 17 76:10, 11, 12, 13 78:24
eighty-five 26:2, 12	elevation 64:24 65:1, 2, 8	entering 26:10 31:24	
eighty-one 23:17	elevations 58:10, 20	entire 64:5 71:19	
eighty-two 24:2	embodied 78:24	entrance 8:17 9:11 20:22, 25 21:3, 6 24:5 25:13 42:18	exhaust 21:17, 20, 22 22:1, 14 31:14
electrical 52:16 53:12	embodiment 22:21 23:4 31:6 34:23 40:1 73:15 74:11 75:5, 18 76:10, 11, 12, 13 78:6, 11	entrances 19:7 20:20 21:9 22:6, 13, 17 23:5, 8 73:11	exhibit 4:23 6:23 9:19, 23, 25 13:15 17:17 32:14, 23 47:23 48:1 49:12 54:17 57:6 58:13, 25 60:8, 15, 19 72:14, 22 78:3 79:22 82:7, 8, 11, 17 83:2
electrically 80:15, 16	embodiments 22:18 56:20 77:9	equivalence 50:15	
electricity 12:17, 22 13:7, 11	emitting 33:6 35:24 38:23	et al 32:18 event 6:3 evidence 24:25 25:1	
electromechani cal 11:5	enclosed		exhibits
electronic 5:9, 11, 12, 13, 16, 18, 21, 22, 25 6:1, 2 7:5, 9, 11, 19 10:25 11:11, 14 13:23, 25 14:2			

82:14	extend 30:10	16,20 62:4	45:2,6,15
exists 71:5	46:7,9,12	63:10,14	75:4
exit 8:17	extending	64:4,7,10,	fifty-three
9:11 18:10	46:20	25 66:11	36:21,24
21:14,22,	extension	67:11,16,	37:1,11
25 22:6,17	47:18	19,20,21	38:7 40:20
24:6 25:13	extent 69:14	68:1,6,21	41:6 42:8
exiting	exterior	69:2,3,18,	45:23
23:15	75:1 76:1,	19,24,25	fig 45:24
31:13	6,22	70:2,3,4,	figure 14:24
exits 21:19	external	8,12,13,	15:1 18:22
23:10	76:16,18,	16,21,24	19:11,15,
37:18	24 78:25	71:5,13,	25 21:5,6,
42:18	79:2	18,20,23,	8,14,17
expect 52:17		24 72:2	22:1,3,5,
experience	F	fans 24:10	14,23,25
5:8,15		fashion	23:4 24:7
6:2,18	facing 13:24	20:23	30:25
expert 81:2,	37:4,7	features	31:2,5,12,
6	40:22	58:15	18,23 32:1
explained	fact 30:2	fifteen 4:11	33:14,17
56:19	69:24	fifty- 41:6	34:15,16,
explains	factors	fifty-eight	19,21,23
20:7	22:10	13:16,17	35:18,20,
exploded	facts 29:16	54:19	21 36:1,8,
33:15,17	fair 27:12	fifty-five	13,16,23
43:13	39:19 40:5	41:7,9	37:1,8,12,
45:3,12	fan 33:19,	44:4 45:18	13 38:9
76:12	22 34:3,5,	fifty-four	39:6,17,20
exposed 15:2	6,10,23,24	41:9	40:1,3,13,
45:21	35:2,3,4,	fifty-one	18,19
expressly	5,15 37:6,	34:18	42:11,14,
35:25	16 41:16	42:25	21 43:3,5,
	42:18	43:16,18	6,12,18,23
	59:6,8,12,	44:1,2,6	44:1,6,12,
			13,14,23
			45:4,6,12,

14, 19, 25	29:2, 3, 8, 9	78:22	17:1, 14
46:3, 6, 11,	30:11, 12,	flowing	18:3, 12
16 47:4	13, 19	20:10	19:9, 22
48:9, 12, 13	31:21, 22	37:23	21:11, 15
49:4 50:5	filtered	38:2, 10	22:2, 7, 15,
57:11	30:12	40:14	20 23:2, 6,
58:1, 7		41:15	12, 22
62:2, 7, 9,	filters 20:4	42:4, 15	24:1, 15, 23
10, 21	27:15, 20,	66:22 67:6	25:7, 16
63:12, 18,	25 28:12,	flows 19:20,	26:1, 20, 25
25 64:21,	17, 20	24 22:5	27:6, 22
22, 23	29:4, 5, 10,	37:17	28:19, 25
65:6, 9, 18,	12, 13, 14,	41:12, 22	29:7, 22
20 66:2, 3,	15, 25	42:17 62:4	30:8, 20
6, 8, 18	30:4, 17, 24	64:1	33:2, 10,
67:1, 21	finding	forced 67:22	16, 20
69:1 70:20	25:12	70:12, 14	34:8, 25
73:12, 15,	fine 10:3	forcing	35:7, 17
18 74:4, 11	20:8, 12	67:10, 15,	36:2, 10, 18
76:7, 8, 10,	28:12	20 68:9	37:9, 19, 25
11 78:3, 6,	29:4, 8, 12,	70:5, 8, 17	38:5, 19
11	25 30:13	71:23 72:1	39:21
figures	31:21, 22	form 5:17,	40:17
16:21 31:1	32:21	24 6:11	41:13, 19
42:1 59:6	five-minute	7:7, 10, 14,	42:6, 20
65:15, 25	32:6	20, 25 8:8,	44:20
76:23	flat 58:19	13, 22 9:6,	45:7, 16
fill 62:22	62:19	15 10:6, 12	46:8, 15
film 64:1,	64:8, 25	11:1, 12, 24	47:10, 14
4, 7, 9, 11,	flow 18:1,	12:12, 18	48:16
15, 19	16, 20	13:3, 8	49:10, 19
67:3, 4	24:4, 13	14:4, 11,	50:12
71:8, 18,	25:15	12, 15, 18,	51:2, 14, 21
20, 21	64:15	22 15:7,	52:7, 13, 19
filter 20:8,	74:9, 13,	11, 21	53:2, 10,
12 28:8,	17, 20	16:11, 15	16, 20
14, 23, 24	77:12, 15		54:1, 5, 11
			55:3, 14, 22

56:25	forty-four	33:11 64:1	ground 4:12,
57:23 58:5	48:8 49:20	generally	14 49:21
59:14,23	50:2 52:1	56:18	51:9
60:24	forty-one	generated	guess 29:12
61:14,18,	18:23 26:7	64:3 71:17	guidance
25 62:6,	forty-seven	generates	18:13
17,24	26:8	64:7,10	guide 10:10,
63:22 64:4	forty-three	generating	14,18,22
65:11,23	34:10	34:12	11:19 12:3
66:5,13,23	forty-two	Gershowitz	15:2,6,23
67:12,17	20:3 59:3,	4:1,4,7	20:15
68:7 69:6	5	72:11	
70:6	fourth 10:21	83:8,12	H
71:18,25	fresh 20:14	Gillespie	hand 4:23
73:20	full 4:6	58:8	9:19 47:22
74:7,12	fully 26:21	Gillespie's	handed 6:23
75:12,22	function	82:11	72:14
76:2,20	12:23	give 32:2	hanging
77:13	50:10,13	41:1	32:14
78:7,13	78:24	glad 51:6	49:12 60:8
79:9 80:14	functioning	glass 12:21	happy 11:3
formation	35:4	good 4:4,5	51:16 53:4
52:22	G	32:5 60:3,	56:9 72:3
formed 14:25	gap 68:1,2,	5 72:5	hard 78:15
41:7,10	12,20,23,	Great 32:22,	hardware
73:8 78:22	24,25	25 34:6,23	17:19 18:5
formulated	69:3,5,7,	57:10	74:2
66:25	14,17	83:11	heat 42:22
forty 28:2,6	70:21,25	green 40:20	heat- 34:11
39:11 57:8	71:4,5,7,9	42:13 44:5	heat-
58:1	gaps 14:25	47:19	generating
forty- 61:19	general 27:1	57:17,20	34:13
forty-five		grid 14:25	height 65:10
34:10			
50:2,3			
52:1			

highlighted	48:12, 18,	include	5:18 10, 13
46:12 52:8	23, 24	6:1 13:23	informed 6:7
58:21	49:16	22:19	initial
holes 73:6,	50:21	included	81:17, 19
8, 19 74:6,	51:12	27:15	inlet 34:6,
8, 9, 18	63:13, 16	includes	24 35:4
77:10, 20,	79:6, 16	10:9, 10, 24	inlets
25 78:1, 4,	identifies	11:11	19:14, 16,
5, 10, 17,	19:2 37:14	21:17	17, 21, 25
18, 20, 24	48:24	40:6, 7	20:5, 19, 24
79:1, 3, 4,	identify	58:20 68:1	21:8
5, 19	40:3 79:15	73:19	31:13, 16,
Hong 55:20,	identifying	78:20	18
24	42:9	including	inputted
hope 72:18	illustrated	26:9 54:10	10:18, 23
hour 32:5	20:4 49:3	58:21	11:20 12:3
60:4	50:4	incorrectly	inquiring
housing	illustrates	11:8	25:8
63:5, 7	58:8 64:21	increase	instituting
	65:18	55:6, 18	72:12
I	illustration	increased	insulating
	37:20	54:23	23:19
i.e. 70:12	43:15	increases	intake 20:12
IC 12:20,	57:19	20:10	22:19 23:1
22, 24	62:15 67:1	indicating	28:8, 11
ident- 48:22	69:8	31:19	78:25
identified	illustrations	62:10, 11	integrated
19:25 21:8	76:14, 23	65:24	12:25
29:24	image 10:18,	indication	integrity
36:11	22, 23	31:23 32:2	16:5
38:13	11:19	46:20 67:1	intended
39:17	12:2, 3	indications	71:7
40:21	imply 12:22	22:8	intent 71:7
42:14	22:9	indoor 54:3,	
47:19			

77:15	81:8	71:6, 8	44:12 48:5
intentional	invention	items 38:13	55:7 56:8,
20:7	6:2 26:18	44:15	9,10,15
interconnect	41:15	70:18	58:24
80:17	56:20	it's 22:16	59:5,12,16
interface	73:16	35:21	65:15
8:3	79:1,20	39:13 65:7	Kim's 33:8
interior	inventor	72:5 81:15	34:16
75:1,21,	32:18	I'll 9:19	37:22 38:2
24,25	investigation	17:7 35:10	40:11,14
76:6,22	82:17	I'm 7:3	41:15,25
78:21,22	involve	12:13	42:4 56:5,
internal	80:10	23:18	23
64:24	involved	39:22	Kimura 60:8,
79:12,13	11:23	47:23	10,13
interpret	29:14	50:13 57:9	62:2,9,10,
18:18,19	IPR 4:24	62:2,8	18 63:3,5,
interpretation	9:23 32:23	63:4 64:20	8,25 64:2,
22:3 70:16	60:16,18	70:23	6,12,19,22
interpreting	72:23	74:23	65:1 66:17
24:16,24	81:25	I've 50:20	67:9,14
intrinsic	IPRS 4:21	67:18	68:2,5,8,
24:25 25:1	72:12	72:14 81:9	13,16,21
introduce	80:24		69:1,19,24
49:12	irrespective	K	70:2,20,24
introduced	64:11	Kim 32:18,	71:6,8,12,
20:8 49:11	issued 81:17	20,25	16,20 72:2
55:24	ITC 80:22	33:4,14,	79:25 80:2
introducing	81:2,7,16,	18,21,23	Kimura's
30:15	23 82:1,2,	34:1,2,9,	60:22
introduction	11,17,24	17 37:8,	64:10
6:14	83:1	12,21	65:15
invalidity	item 33:25	38:9,21	67:3,25
	69:7,8	41:4 43:1,	Kimura's
		3,12,19,23	71:23
			Kim's 33:15

58:19	65:22 66:4	59:3,4	make 44:18
Korean 72:15	let's 15:24	75:17	59:21 68:9
	18:22 28:5	liquid 63:9	makes 29:23
L	33:4 36:20	list 82:8	64:8
	54:15	83:2	making 52:20
labeled	56:12 57:8	listed 82:23	mark 72:14
35:25 37:3	59:2,24	located	marked 6:23
39:6,20	73:1	17:19 18:5	9:25 47:23
43:4	light 10:10,	23:25 69:4	match 66:8
language	11,14,18,	74:2	mated 45:19
16:23 71:2	22 11:19	location	47:4
large 69:15	12:3 15:2,	8:7,12,18	material
81:24	5,23 20:15	9:2,14	81:11
82:21	33:6 35:23	59:12,20	materials
larger 78:5,	36:4 38:23	61:7 63:20	23:20
10,15	39:3,13	locations	matter 57:2
layers	40:8	59:17	MC 54:22
28:17,20	light- 33:5	looked 35:22	meaning
LCD 6:17	38:22	45:24	20:25
49:23	light-emitting	82:14	means 67:10,
53:18,24	39:3	loss 39:22	15 68:9
54:3	limit 8:6	lost 34:1	70:4,8
LEDS 33:1,	limitation	lot 57:6	80:11
6,8,11	9:2,13	lower 20:9	mechanical
38:23	48:5 50:17	28:9,12	52:16
39:3,15	limitations	59:7	53:12
55:9 80:1,	7:10 8:11,		80:17
3,6,9,12	18 49:6	M	mention 13:5
left 25:24	52:2		82:1
26:5	limited 14:3	made 12:20	mentioned
27:21,24	lines 16:18	55:9	11:14
29:20,24	34:10	majority	mentions
30:1,6	41:20	61:11,21	
35:2 69:2	49:3,22		
length 31:17	50:5 56:17		

13:10	moment 13:18	MRI's 81:22	non-uniform 58:16
met 50:9	moments	multiple	
52:2	11:25	33:24	normal 37:22
metal 53:14,	monitor	38:13	38:2
18,22,23,	56:6,9,16,	78:20	40:11,14
25 54:3,7	19,23		42:3 43:17
55:1,4,7,	57:3,4	N	note 32:10
13,15,18,	morning 4:4,	Na 72:19	58:7 72:7
19,21	5	77:6,25	83:5
metal-fed	mount 80:9	78:17,23,	notes 4:17
80:15	mounted	25 79:6,	notion 12:21
method 11:4	12:21	11,14,15,	79:12
methods	33:9,12	16,18	number 4:24
80:10	39:16 40:9	Na's 73:5,9	6:24 9:20,
Michael 4:1,	80:2,7,12	78:3,10,23	23 17:12,
7	mounting	NAOMI 4:3	15 32:16
middle 20:13	33:13 80:9	32:12 72:9	38:11,12
22:19,25	move 58:24	nature 11:5	48:2 49:13
28:13 43:1	59:25	80:1	60:9 72:16
57:10 73:8	70:17	Na's 78:5	73:21
midway 11:16	71:7,8	Neal 4:1,7	81:24
27:13	78:23	necessarily	82:21
misspoke	moved 59:16	46:18	numerous
70:1	79:2,5	necessitated	36:6
misstatement	movement	54:6	73:11,19
68:25	79:19	needed 55:9	0
model 54:12	moves 20:5	ninety-	Object 7:7
modify 53:8	70:21,25	44:10	objection
modifying	71:13	ninety-nine	5:17,24
52:24	moving 20:4	45:18	6:11 7:12,
molecule	57:6 70:14	46:24 47:3	14,20,25
29:13	72:25	nodded 16:17	8:8,13,22
	MRI 4:15		9:6,15
	81:1		10:6,12

11:1, 12, 24	48:16	offer 51:18,	opinion 5:3,
12:12, 18	49:10, 19	24 81:2	14 14:9,
13:3, 8	50:12	offered 6:4	16, 20
14:4, 12,	51:2, 14, 21	30:21, 23	23:19 25:4
18, 22	52:7, 13, 19	51:3, 22	30:18
15:7, 11,	53:2, 10,	80:23	45:3, 11
15, 21	16, 20	offering	51:4, 11,
16:11, 15	54:1, 5, 11	66:19	18, 23, 24
17:1, 14	55:3, 14, 22	offers 18:13	53:6 64:13
18:3, 12	56:25	open 29:19	66:9, 11,
19:9, 22	57:23 58:5	30:6, 19, 22	16, 19, 21,
20:21	59:14, 23	openings	24, 25
21:11, 15	60:24	16:6 19:1,	67:5, 9, 14
22:2, 7, 15,	61:14, 18,	6, 11, 12, 19	68:5, 8
20 23:2, 6,	25 62:6,	20:18, 24	73:4
12, 22	17, 24	27:16	opinions 6:8
24:1, 15, 23	63:22	operated	8:23, 25
25:7, 16	65:11, 23	10:17, 21	9:18 14:7
26:1, 20, 25	66:5, 13, 23	11:18 12:2	48:4 57:4
27:6, 22	67:12, 17	operates	80:24
28:19, 25	68:7 69:6	42:2	81:2, 4
29:7, 22	70:6 71:25	operating	opposite
30:8, 20	73:20	43:17	12:21
33:2, 10,	74:7, 10, 12	55:10	28:14
16, 20	75:12, 22	operation	order 47:24
34:8, 25	76:2, 20	11:23 12:4	68:18
35:7, 17	77:13	16:2, 7, 10,	ordinary
36:2, 10, 18	78:7, 13	14 18:14,	5:4, 14, 21,
37:9, 19, 25	79:9 80:14	16 37:22	23 6:5, 9
38:5, 19	objects 36:6	38:2	12:15
39:21	obvious 68:9	40:11, 14	52:25
40:17	occurring	42:3	59:19 65:4
41:13, 19	27:23 32:3	opine 5:7	oriented
42:6, 20	off-the-record	52:14	24:4, 9, 13,
44:20	32:10 72:7	outlet 19:18	22 25:6, 15
45:7, 16	83:5		
46:8, 15			
47:10, 14			

outline	35:9	paragraph	23 78:16	25 21:2
overlooks		5:1, 3, 20	79:11, 22	23:24
69:23		10:4, 7, 13,	paragraphs	24:3, 6, 7,
		16, 20	6:18 64:12	12, 21
	P	11:16, 17		25:1, 9
		12:10, 19	parallel	31:10
p.m.	83:6,	13:16, 17,	23:21, 25	32:16 33:3
14		22 14:6,	24:4, 13,	40:25
pages	50:1	13, 23	19, 22	41:1, 3, 4
52:1		15:24, 25	25:2, 6, 15,	43:20
panel	11:18	17:16, 23	17 57:21	47:21
12:1, 2		19:3 20:2	58:3	48:2, 5
20:15		23:17 24:2	part 39:15	49:6, 13
25:14		26:2, 7, 12,	55:15	57:5 60:9,
44:12		13 27:12,		12, 18
62:19 63:9		13 28:2, 6	partition	61:1, 3
64:8, 25		31:4 34:1	19:2, 4, 5,	62:7 65:8
		44:10	7, 12, 14	67:16, 19,
panels	7:23	45:18	20:9, 13	21 68:4,
8:3, 7, 9,		46:24 47:3	22:25	14, 17
14, 19 9:2,		48:6, 22	28:1, 13, 24	69:11, 20,
9, 14		50:1 51:15	35:6, 9	25 70:3
14:14, 16,		54:16, 18	37:23	72:15
20, 25		55:4, 25	parts 34:12,	73:13, 16,
15:5, 17,		56:22	13 38:17	19 74:25
19, 22		58:6, 13, 14	pass 28:23	75:3, 4, 10,
23:20, 25		60:20	29:2, 3, 5, 8	14 76:17
24:3, 8, 13,		63:2, 23	30:3	78:6, 12, 19
19, 21		64:6, 7, 23	passed 29:13	79:3 81:7
25:6, 11,		65:13		patents
15, 18, 24		67:8, 18	patent 6:21,	80:23 81:3
26:5, 9		69:22	24 7:2, 5,	paths 17:20
44:8, 19		70:1, 10	22 8:6	18:7
45:20		71:4, 16	9:3, 20, 22	PCB 33:9, 12
46:3, 6		73:2, 4, 8	12:8 13:23	49:1 55:7,
47:5, 8, 11,		74:22, 24	14:2 16:1,	15, 18, 19,
15, 16, 17		76:25	9, 13, 18, 24	21 80:13,
		77:1, 5, 19,	17:4, 9, 18,	

15	Petitioner	60:23	10:17, 21
PCBS 53:15,	51:13	61:4, 8, 9,	11:17
18, 22, 23,	Petitioners	13, 16, 20,	12:1, 6
25 54:3, 7,	6:4 49:16	24 64:17	20:9, 11, 13
22 55:1, 4,	72:18	67:24	28:9, 13
6, 13	Petitioners'	68:10	58:12, 21
perceived	6:8	73:5, 6, 9,	59:7, 9
42:12	photovoltaic	18, 25 74:2	POSITA 16:4
performing	13:13	76:13	18:19
50:10	phrase 31:6	77:18	27:14
period 54:9	phrases 36:3	78:10, 20	30:16
person 5:4,	place 5:22	plugged	54:22
7, 14, 21, 23	placement	13:7, 11	76:24
6:5, 9	30:23	18:14, 15,	position
12:15, 16	plate 8:2, 4,	18 74:13	77:6
30:5 52:25	10, 15, 20	77:15	positioned
53:7	9:4, 8, 10	plugs 16:20	13:24
59:19, 21	10:11, 14,	74:3, 16	45:20 47:5
65:3 80:19	18, 22	plural 22:17	64:14
personally	11:19	plurality	positioning
43:6	12:3, 21	17:5, 10	65:19 66:1
Perspective	15:6, 23	33:5 35:23	69:24 70:2
76:9	17:6, 11, 20	38:22 39:3	posterior
pertains	18:6 19:2,	point 13:4	7:24 8:2,
51:9	4, 5, 7, 13,	21:1 35:19	15, 20 9:4,
petition	14 20:9,	36:19	8, 10
36:24	13, 15	41:15 47:2	14:10, 17,
37:14 38:7	22:25	51:5 71:2	21 15:3,
44:10, 11,	25:12, 21,	75:24	19, 23
12, 16	22 28:1,	pointed	25:12 44:9
45:25	13, 24	38:21 41:2	48:23, 25
48:9, 24	35:6, 9	pointing	49:8, 17, 24
50:21 51:8	37:24 44:9	36:5, 6	50:7, 19,
57:11	49:9, 18, 25	39:23	20, 25
64:10	50:19 51:1	portion	51:10 52:3
			58:19

61:10, 11, 21, 22 67:24 68:10 74:25 75:5, 6, 10, 11, 15, 16, 18, 20 76:3, 10, 16, 18 potential 68:3, 13 69:17 potentially 53:13 71:5 power 13:1, 5, 10, 12, 14 39:13 58:10 practice 80:8 preceding 12:19 presence 64:11 68:2, 12, 20, 25 69:17 73:6 present 20:22 23:7 56:20 69:8 78:24 prevailing 30:14 prevent 26:9	27:16 previously 47:23 53:11 71:15 77:14 78:14 prime 37:18 42:19 proceeding 80:23 81:3, 7, 16, 23 82:11 products 5:9, 11, 12, 18, 22, 25 52:12 propelled 67:21 70:11 proper 55:10 proposed 10:8 64:10 78:19 protruding 58:12 protrusions 58:9 provide 5:3 17:20 18:6 78:21 provided 28:8, 12 40:24	PTAB's 72:12 publication 9:22 60:9 pulled 37:6 purpose 78:17, 18 79:1, 3 purposes 43:14 pushed 45:4, 12 Q qualify 5:22 6:3 question 7:15, 16 8:5 9:1 11:8, 9, 10 12:14 14:19 17:7, 8 19:23 21:16 24:11 26:3 28:4, 5 35:12 38:1 43:24 45:9, 10, 11 47:11 50:6 56:14 64:17 66:14 67:13 68:20	70:7, 15, 23 71:11, 12 75:13 78:8, 9 questions 83:8, 10 quick 83:4 quote 50:3 quoting 71:16 R re- 82:19 reaches 66:18 reaching 66:11 read 9:13, 17 13:19 41:14 59:10 61:24 72:16 75:17 reads 28:11 ready 14:8 rear 28:9, 15, 23 30:10 37:4, 7 39:10, 14 40:22 41:21 42:9 48:25 49:1
--	--	---	--

52:3	recommendation	referenced	regard 68:19
57:14, 21	18:19	21:13	regions
58:4, 9, 15,	record 4:6	references	28:14
17 64:4	26:11	33:24	related
71:18, 21	32:22	44:11	80:22
rear- 13:23	60:15	63:25	81:25
rear-facing	72:22	referencing	82:16, 24
37:14	rectangular	8:24 33:18	83:1
rearward	66:6, 7	51:7	relative
58:12	red 24:9	referred	24:9 65:18
reason 29:11	40:21	33:23	66:1
71:3	42:8, 13	36:11	relevant
	49:3 50:5	43:13	27:11
reasonable	57:15, 22	46:17, 18	remove 64:18
30:16	redirect	47:16 65:7	removed
33:13	83:9, 10	71:15	62:22
recall 11:13	ref 81:9	73:23	63:19
51:6, 22	refer 10:1	78:16	removes
66:19	11:3 22:22	81:10	42:22
81:10, 12	32:20	82:22	repeat 7:16
82:2, 3	34:20, 22	referring	9:1 14:19
recently	44:11, 12,	19:11 21:5	17:7, 8
81:16	24 58:6	41:20	19:23
recite 61:12	60:12	50:13, 14	21:16 26:3
recited 49:1	63:23	51:7, 16	28:4 35:11
67:15	72:3, 19	62:7 73:21	38:1 43:24
recites	82:9	76:15	45:9, 10
61:3, 7, 9	reference	77:11, 22	66:14
recognize	9:19 10:1,	82:14	67:13
4:23 6:24	2 32:5	refers 26:23	70:7, 23
48:1	40:12	31:5 33:21	75:13 78:8
recollection	55:20	34:2, 17	rephrase
11:4, 6, 13	58:13, 25	36:13	18:9 19:13
12:7 17:2	59:25 64:8	41:21 65:1	29:18
51:6	70:1 72:19	reflected	71:12
		83:2	

79:15	12:22	25 82:3, 7,	20 23:2, 6,
report 8:24	13:11	23	12, 22
14:13	52:21	reviewing	24:1, 15, 23
17:24 18:4	requirement	82:2	25:7, 16
19:3 20:2	61:7	rotational	26:1, 20, 25
21:1 24:2	requirements	34:14	27:6, 22
37:11, 13	61:13, 23	rotationally	28:19, 25
38:8 40:19	requires	64:3 71:17	29:7, 22
42:8 50:1,	7:5, 22	rounded 66:7	30:8, 20
20 51:23	17:5, 9	rules 4:13,	33:2, 10,
55:24	21:3	14	16, 20
57:25 58:7	resized	run 12:17	34:8, 25
78:17	77:10		35:7, 17
reporter	respect 15:1		36:2, 10, 18
45:11	19:10, 16	s	37:9, 19, 25
REPORTER'S	31:15 48:5	SANDERS	38:5, 19
32:10 72:7	58:17	5:17, 24	39:21
83:5	64:25	6:11 7:7,	40:17
reports 81:7	65:14 72:2	12, 14, 20,	41:13, 19
repositioned	response	25 8:8, 13,	42:6, 20
77:10	43:8	22 9:6, 15	44:20
representative	restate 11:9	10:6, 12	45:7, 16
65:16	retained	11:1, 12, 24	46:8, 15
reproduced	4:15, 21	12:12, 18	47:10, 14
37:11, 14	review 4:17	13:3, 8	48:16
38:7	13:18 14:7	14:4, 12,	49:10, 19
require	51:23	18, 22	50:12
12:10, 16	54:12	15:7, 11,	51:2, 14, 21
17:13	72:11	15, 21	52:7, 13, 19
23:24	81:6, 22	16:11, 15	53:2, 10,
24:13, 21	82:5, 10	17:1, 14	16, 20
25:5, 14	83:1	18:3, 12	54:1, 5, 11
49:14	reviewed	19:9, 22	55:3, 14, 22
53:23	81:10, 20,	20:21	56:25
required		21:11, 15	57:23 58:5
		22:2, 7, 15,	59:14, 23
			60:24
			61:14, 18,

25 62:6, 17, 24 63:22 65:11, 23 66:5, 13, 23 67:12, 17 68:7 69:6 70:6 71:25 73:20 74:7, 10, 12 75:12, 22 76:2, 20 77:13 78:7, 13 79:9 80:14 83:10 scale 46:19, 21 65:16, 25 69:11, 12 78:15 schematic 34:17 46:17 screws 58:23 SEC 9:23 32:22 60:15 72:22 section 6:13, 14, 15 11:2 51:5 52:8 72:3 sectional 31:5, 7, 8, 11 32:1	sentence 10:8, 21 13:22 15:25 28:11 54:21 57:1 63:6 69:22, 23 70:1, 11 74:24 77:24 79:25 sentences 56:5 separated 43:14 series 82:13, 16 service 79:13 servicing 77:16 79:4, 12 set 6:14 seventy- 17:16 20:2 48:22 77:24 seventy-eight 63:2 64:6, 13 seventy-seven 19:3 seventy-six	48:6 50:1 seventy-three 15:24 17:23 79:11 seventy-two 79:23 80:5 shaded 58:22 shades 58:15 shape 58:16 66:7 shapes 66:6 shield 35:16 37:7, 15 38:3, 11 40:15, 21 41:8, 10, 17 42:5, 14 45:22 46:13 47:9, 12, 19 52:5, 9 57:17, 20 58:3, 17 59:7, 9, 17 show 31:12 59:6 76:14 showing 22:13 23:14 31:5 42:12 64:24 shown 16:21 19:14	22:14, 16 24:7 34:23 36:16 39:20 40:1, 20, 21 42:21 44:13, 14, 23 45:6, 14 50:6 74:4 78:6, 11 shows 22:25 23:4 33:15, 17 34:23 48:13 62:15 66:6 73:15 side 7:22 8:3, 7, 9, 14, 19 9:2, 9, 14 14:24 15:3 23:20, 25 24:3, 8, 13, 19, 21 25:2, 6, 11, 14, 15, 18, 23 26:4, 9 27:9 39:10, 14 41:21 44:8, 11, 19 45:20 46:3, 6 47:5, 8, 11, 15, 16, 17 48:25 49:1
--	--	--	--

52:3	34:2, 5	42:18	speaks 37:21
57:14, 21	sixty 65:12	small 35:1	71:20
58:4, 15	sixty- 71:15	77:20, 25	specific
64:23, 25	sixty-eight	smaller	8:23 11:2,
65:2, 7	58:6	78:15	5 12:7
66:20	sixty-five	Smith- 58:7	19:10
67:2, 6	56:18	82:10	20:25
sides 20:15	sixty-four	Smith-	22:21
25:24 26:5	56:12, 17	gillespie	26:22
27:5, 8, 10,	67:19	58:14, 18	31:15 36:7
15, 21, 24	70:11	so-called	51:15 53:4
29:20, 24	sixty-nine	47:8	54:12
30:1, 6, 10,	58:14	solely 79:1	55:17
12, 14, 17,	78:17	solution	61:12
18, 22, 24	sixty-one	55:9	62:25
31:24	14:6, 14	source	70:16, 19
32:2, 3	sixty-six	13:10, 12,	71:2 72:3
45:5, 14	56:13	14 33:6	specifically
52:5	sixty-three	36:4 38:23	4:21 5:15
signal	61:5	39:3, 13	7:4 11:14
10:19, 23	sixty-two	40:8	13:9 25:8
11:20 12:3	14:23	space 26:24	35:21
significantly	sizes 65:17	27:5, 7, 10	49:22
68:3, 13	skill 5:4, 7,	35:5, 15	52:14 64:2
silent 29:25	14, 21, 23	37:7, 16, 23	67:19 71:4
30:9 79:18	6:5, 9	38:3, 10	81:11
similar	12:15 30:5	40:15	82:1, 18
16:21	52:25 53:7	41:7, 10,	specification
74:4, 16	59:19, 21	12, 16, 22	16:9, 13, 23
simply 20:19	65:4 80:19	42:4, 13, 15	18:1, 13
50:24	slide 49:2	46:13 69:1	24:17, 18,
single	50:3	71:13	25 25:2
14:11, 15	slits 37:18	spaced 69:3	33:21
22:9, 13		SPEAK 4:2	35:22 36:4
sixteen			37:21
			40:10
			74:15

75:4, 9, 14, 23 76:17	53:11 55:4	step 19:1	surface 7:24
specifications 76:14	56:17	subject 83:8	8:16, 21
specifics 81:20	57:24	subsequently 29:3	9:5, 8, 10
spherical 27:9	66:24	substantially 20:16	14:10, 11, 15, 17, 21
squeezed 43:10	68:8, 24	57:21 58:3	15:4 25:12
stand 34:4 82:18	76:9 77:14	substrate 33:12, 13	37:4, 7, 14
state 4:6 7:16 8:9	78:14	sucked 78:25	40:22 42:9
14:13	79:10	79:2, 5	44:9
16:1, 4	statement 8:12 9:12	suggest 54:22	48:24, 25
17:16 18:4	12:1	suggested 74:14	49:9, 17, 25
19:3 20:2, 6 26:7	30:21, 23	suggesting 46:22	50:8, 19, 21, 22, 25
27:13	51:3 52:20	suits 26:9	51:10 52:3
44:21 45:8	53:3 76:21	suitable 13:25	58:9, 17, 19
55:24	79:6, 16	supplied 20:14	61:10, 11, 21, 22 64:4
58:14	statements 12:20	supplies 13:2, 5	67:24
65:14, 24	12:20	supply 58:11	68:11
68:12	20:16, 17	support 80:18	71:18, 21
69:18, 21	29:23	supporting 24:17	74:25
73:4, 7	states 7:8	switch 32:4 47:20	75:1, 6, 10, 11, 15, 16, 19, 20, 21, 24 76:1, 3, 6, 16, 18, 19, 24
77:5 78:19	8:1 9:7, 16	system 7:5, 8	
79:25	10:16		
stated 5:25 10:7, 13	11:17		
11:25	16:19		
14:23	25:10 28:7		
17:12, 23	32:24 33:4		
24:2 40:10	34:9 38:21		
48:22	39:12 41:6		
	61:15, 20		
	62:1, 18		
	75:4 76:18		
	77:9 79:18		
	stating 12:13		
	50:17		
	51:25		

34:18	21:9, 19	thermal	50:3 65:13
55:16	27:15	23:19 55:9	total 19:19
	28:22	things 73:1	translation
T	29:6, 19	thirteen	72:15
	30:5	41:20	transmitting
Takahuchi	Takeuchi's	thirty 64:7,	10:11, 14
27:23	18:22	12 74:14	travel 24:5
Takeuchi	talked 66:10	thirty-eight	64:19
9:19 10:2,	taught 68:3,	59:3, 5	67:22
4, 5, 16	14	thirty-five	70:12
11:2, 4, 15,	teach 30:14	5:1, 3, 20	TRUTH 4:2
17, 22	teaches 16:1	thirty-nine	turbulence
12:10, 13	77:6, 9	64:23	22:10
13:4, 9, 13	79:14	thirty-three	turn 5:1
14:24 15:3	teaching	33:4 36:12	6:13, 21
19:1, 5	30:1	38:25 39:1	7:2 9:18
20:6, 20	temperature	thought	10:4 11:16
21:5, 6	20:9	40:13 65:3	13:15 14:6
22:12, 18	55:10, 11	time 6:1	15:24 17:7
23:20	ten 25:10	30:15 54:8	18:22
25:23	49:22	72:5 83:7	23:16 28:2
26:4, 8, 15,	61:19	timeframe	33:3, 14
17 27:3,	term 72:1	53:1, 7, 25	36:20
20, 25	terminology	54:4	42:25
28:2, 3, 6,	36:3	times 4:10	48:4, 6
7, 17 29:1,	terms 78:19	38:21	49:13
18, 23, 24	testimony	today 65:3	54:16
30:2, 9, 13,	82:11	83:7	55:25
25 31:1, 2,	that's 27:12	top 19:18	56:10, 12
4, 12	39:15	20:3	57:5, 8
Takeuchi's	54:15	23:10, 15	58:24 59:2
10:10, 24	there's 67:1	26:8 36:25	67:8 73:1
11:10		45:5, 13	74:22 75:3
12:16			76:25
13:1, 6			79:21
19:4, 24			
20:17			

Turning		Unexamined	unlabeled
30:25 66:9	U	72:15	58:11
TV 56:9,15, 19,24 57:3	u.s. 6:24	uniform 58:9	unplugged
twenty 4:11	9:20 32:16	uniformly	18:20
31:4	48:2 49:13	20:16 64:6	74:21
twenty-	60:9	71:20	upper 20:10
33:23	unannotated	unimpeded	58:12 59:9
49:22	37:12	64:16	upward 62:11
73:24	understand	unique 10:8	utilize 13:1
twenty-eight	4:14 6:4	unit 33:1,5	utilized
74:14	7:15 12:9,	34:3,5,24	12:7 53:25
twenty-four	16 16:5	35:3,6,23,	54:8
49:23	24:11 25:4	25 36:4,8,	
twenty-nine	26:21 30:5	11,13,16	v
13:16	36:15 46:5	37:4,8,15,	variety
16:19	59:20 66:2	24 38:3,	58:20
twenty-seven	69:10	18,22	vent 20:12
11:16	80:22	39:2,10,	22:19 28:8
12:10	understanding	14,16,17,	vents 23:1
16:19	8:25 13:6	20,23,24,	28:11
twenty-six	21:21	25 40:2,4,	version
12:19	24:16	5,7,9,15,	36:23 43:1
two-thirds	41:24 42:2	23 41:8,	45:25 48:9
28:7	46:16	11,17,21,	57:11
type 7:18	49:15	22 42:5,9,	vertical
types 13:22	54:13	10,22	40:22 42:9
30:3	76:23	45:21	62:11
typically	80:20,25	46:13 47:6	vicinity
26:19,23	understood	48:25 49:2	31:20,22
27:5	18:9 21:7	50:4 52:10	video 10:17,
34:19,21	44:18	57:14,21	22 11:18,
	52:23	58:4,8,16	22 12:2,9,
	53:8,12	59:6,12	11
	65:4,20	63:9 64:5	
	undesirable	65:10 68:2	
	79:7,17	71:19,22	

view 31:5, 7,8,11 32:2 33:15,17 34:16,17 36:7 45:3, 12 76:9, 10,12	words 26:17 27:3 45:17 57:1,2 work 4:21 6:17,18 79:20 working 5:8, 15 6:2 works 41:25
volume 42:16	
w	workstation 56:6,23 57:3
wall 24:8	
walls 25:2	wrong 35:9
wanted 47:21	62:3 74:23
warming 20:5	82:6
warranted 54:23 55:18	y
we'd 34:21	year 4:16, 17
We're 47:23	years 5:8
we've 45:24	yellow 20:5 43:22,25
what's 10:13	44:5,7,15, 16,19,21
wind 64:3 71:17	46:2,6,12 47:17
withdraw 38:20	48:11,14 49:4 51:19
word 12:5, 6,7,14 20:22,23 21:1,6 25:17 26:23 71:4	52:8 58:21 you're 77:11 you've 18:22 43:22,25