

UNITED STATES INTERNATIONAL TRADE COMMISSION

In the Matter of:	)	Investigation No.
CERTAIN OUTDOOR AND SEMI-OUTDOOR	)	337-TA-1331
ELECTRONIC DISPLAYS, PRODUCTS	)	
CONTAINING SAME, AND COMPONENTS	)	
THEREOF	)	

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1 UNITED STATES INTERNATIONAL TRADE COMMISSION
2 Washington, D.C.
3 BEFORE THE HONORABLE MONICA BHATTACHARYYA
4 Administrative Law Judge

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6 In the Matter of:) Investigation No.
7 CERTAIN OUTDOOR AND SEMI-OUTDOOR) 337-TA-1331
8 ELECTRONIC DISPLAYS, PRODUCTS)
9 CONTAINING SAME, AND COMPONENTS)
10 THEREOF)

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13 International Trade Commission
14 500 E Street, S.W.
15 Washington, D.C.

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17 Thursday, June 29, 2023

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19 EVIDENTIARY HEARING, VOLUME IV

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21 The Hearing commenced in Courtroom A, pursuant to the
22 notice of the Judge, at 9:30 a.m. Eastern.

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

2 (9:30 a.m.)

3 JUDGE BHATTACHARYYA: Good morning. Please be
4 seated.

5 MS. GO: Good morning, Your Honor. We have a
6 housekeeping matter.

7 JUDGE BHATTACHARYYA: Okay. Yes. Please go
8 ahead.

9 MS. GO: My name is Denise Go on behalf of
10 Respondents, and with me I have the table of exhibits for
11 the direct examination of Sungsu Lee and Dean Neikirk, as
12 well as the table of exhibits for the cross-examination of
13 Himanshu Pokharna. May I please approach?

14 JUDGE BHATTACHARYYA: Yes, you may. Thank you.
15 Okay. So I'm going to formally admit the exhibits. I have
16 a table of exhibits entitled Direct Examination of Sungsu
17 Lee. It starts with Exhibit RPX-2 and goes to RX-1222C.

18 Are there any objection to admission of these
19 exhibits?

20 MS. ANDERSON: No objections, Your Honor.

21 JUDGE BHATTACHARYYA: Okay. Then those exhibits
22 are admitted.

23 (Exhibits, as submitted by counsel and reflected
24 in the attached index, were received into evidence.)

25 JUDGE BHATTACHARYYA: I also have a table of

1 the heat transfer part 60 contacts and should be attached
2 to the rear of the backlight assembly. This element
3 comprises a number of cooling fins or conduction elements
4 or both. And then there's a -- like a flange portion, if
5 you will, which are the -- which seal the circulating gas
6 portion, and extending from that flange portion is the
7 second heat transfer part that projects into the ambient
8 air space.

9 So it's my opinion that because the heat
10 transfer -- first heat transfer part is made part of the
11 backlight assembly, that air is caused to flow across --
12 along the backlight in this case.

13 Q. At slide 89, we see that element 12c refers to
14 coolable, that it's coolable by a combination of the closed
15 and open loop. Is Karppanen's display coolable by a
16 combination of the closed and open loops?

17 A. Yes, it is. As I described, the fans 64 of the
18 inner casing cause flow to flow past the front plate of the
19 device. That's a portion of the circulating gas. And then
20 there's also a -- and there's heat transfer parts 60 that
21 are in that closed loop. And then there's a second set of
22 fans and another set of heat transfer parts that reside in
23 the open loop, as I've already discussed.

24 Q. So can you summarize for us, please, the
25 conclusion you reached with respect to claim 12 of the '287

1 patent in view of the Karppanen reference?

2 A. Yes. It's my opinion that the Karppanen
3 reference discloses each of the elements of claim 1, so,
4 therefore -- or claim 12, pardon me. So, therefore, claim
5 12 of the '287 patent is obvious in view of Karppanen.

6 Q. Let's turn next to the '740 and '142 patents.

7 At slide 92, summarize for us, please, any
8 conclusions that you reached concerning the claims of the
9 '740 and '142 patents.

10 A. Yes. Okay. So with regard to the '740, claims
11 1 and 5 are obvious in view of Karppanen, as well claims 1
12 and 5 are additionally obvious in view of Yare. And then
13 with respect to the '142, claims 6 and 10 are obvious in
14 view of Karppanen plus Larson, and as well as being obvious
15 in view of Yare and Larson.

16 Q. How do the claims of the '740 and '142 patents
17 compare to the claims of the '287 patent that you've
18 already talked about?

19 A. So the '287 patent discusses open and closed
20 loop cooling. This is found in both the '740 and the '142
21 patents.

22 The '740 and '142 add a heat exchanger
23 requirement or element. And then the '142 patent
24 additionally introduces a solar energy reduction layer on
25 the front of the display.

1 Q. Were heat exchangers known in the art prior to
2 2008?

3 A. Yes, they were, for quite a number of years.

4 Q. Were solar energy reduction layers known in the
5 art prior to 2008?

6 A. They were as well, yes.

7 Q. So we'll come back to that in a little more
8 detail, but let's start with claim 1 of the '740 patent.
9 Again, you've divided it --

10 A. Yes. It's --

11 Q. -- into the preamble and elements a through f;
12 is that right?

13 A. That's correct.

14 Q. So at slide 95, starting at the beginning, does
15 Karppanen disclose an electronic display and an electronic
16 image assembly?

17 A. Yes. Karppanen discloses display element 26,
18 which is recited to be -- preferably be a TFT LCD display.

19 Q. And is that an electronic image assembly?

20 A. Yes, it is.

21 Q. Does the electronic image assembly have front
22 and rear portions?

23 A. Yes, it does. The front portion is like the
24 image-forming layer on the front of the LCD, and the rear
25 portion is the rear portion of the backlight.

1 Q. Next, the claim 1b of the '740 patent refers to
2 an open loop ambient airflow path.

3 A. Yes.

4 Q. Behind the rear portion of the electronic image
5 assembly. Do you see that?

6 A. I do.

7 Q. Does Karppanen disclose an open loop ambient
8 airflow path behind the rear portion of the electronic
9 image assembly?

10 A. Yes, as I discussed in -- with respect to claim
11 12, claim element 12c of the '287, there's a cooling space,
12 20, which is an open loop cooling zone, which draws in
13 ambient air and passes it along the cooling members and
14 transits it out of the cooling space.

15 Q. At slide 97, the '740 patent, claim 1 element c
16 refers to a closed loop gas circulation path about the
17 electronic image assembly. Is that disclosed by Karppanen?

18 A. Yes. Karppanen discloses this for the same
19 reasons I argued in claim 12c. It is my opinion that the
20 Karppanen discloses this element as shown in Figure 2 with
21 the highlighted arrows.

22 Q. Can you tell us what color those arrows are?

23 A. Those are green arrows.

24 Q. And then slide 98 includes the claim element "a
25 common heat exchanger located in the pathway of both the

1 closed loop gas circulation path and the open loop ambient
2 air flow path."

3 Is that shown in Karppanen?

4 A. Yes. Karppanen discloses a second heat transfer
5 part 62, which resides in the open loop area called the
6 cooling space 20. And then a first heat transfer part 60,
7 which resides in the closed loop portion. And the air
8 circulates around the display in the closed loop portion
9 and transfers heat to the first heat transfer part that
10 gets conducted to the second heat transfer part and then
11 gets carried away in the ambient air stream.

12 Q. What would a person of ordinary skill in the art
13 in the 2008 time frame have understood the '740 patent to
14 mean by "heat exchanger"?

15 A. I would understand it to mean a device that
16 transfers heat from a hot source to another cold sink, if
17 you will. Could be an airflow or it could be some larger
18 cooler solid mechanism.

19 Q. Does the '740 patent limit the heat exchanger
20 referred to in this claim to any specific type of heat
21 exchanger?

22 A. No, it does not.

23 Q. And how would a person of ordinary skill in the
24 art in 2008 have taken the term "common heat exchanger"?
25 What would that have meant?

1 A. Could I revise my previous answer?

2 Q. Sure.

3 A. It does -- the limitation in the '740 is that
4 it's an air-to-air heat exchanger. I should probably have
5 said that.

6 Q. Okay.

7 A. Yes.

8 Q. And what would a person have taken from the
9 expression "common heat exchanger"?

10 A. Common heat exchanger would mean that there's a
11 set of elements, wherein -- that comprise the heat
12 exchanger, wherein one of the elements resides in a
13 separate airpath, a hot airpath, and one resides in a
14 cooler airpath. And the way the heat transfer mechanism
15 works is the element in the hot airflow absorbs heat from
16 the hot airflow and transfers it to the element that's in
17 the cool airflow.

18 So that single heat transfer element resides in
19 both of them.

20 Q. And with those thoughts in mind, does Karppanen
21 disclose a heat exchanger?

22 A. Yes, it does.

23 Q. What are the parts of the heat exchanger shown
24 in Figure 2 of Karppanen?

25 A. The main parts are the cooling elements which

1 actually comprise the first heat transfer part 62 that is a
2 fin array that sits in an airflow in the ambient section or
3 the open loop section, and part -- heat transfer part 60,
4 which resides in the closed loop portion of the display.

5 Q. What do you mean by "fin array"?

6 A. These -- there's -- fin arrays are essentially
7 tall, thin plates that are designed to provide a very large
8 surface area per volume, so that heat can be transferred to
9 an air stream as the air stream moves between the fins.

10 Q. How does the Karppanen heat exchanger work?

11 A. The operation of the Karppanen talks about that
12 in column 8, 13 through 22, that the -- first of all, that
13 the second heat transfer part -- and it actually applies to
14 both the first heat transfer part and the second heat
15 transfer part -- comprising a number of plate-like cooling
16 fins placed side-by-side. The operation of the cooling
17 fins is based on the phenomenon that when the cooling air
18 flows between the fins, heat is transferred from the
19 cooling fins to the air in the cooling space. The task of
20 the cooling elements is to transfer excess thermal energy
21 from the display casing to the cooling space.

22 Q. Is Karppanen's heat exchanger common to both the
23 open and closed loops that you mentioned?

24 A. Yes, it is.

25 Q. Does Karppanen describe any other embodiments?

1 A. Yes. Karppanen, in Figures 3 and 4, discloses
2 an embodiment that includes a ducting system to constrain
3 the air to flow over the cooling fin set or, you know, the
4 cooling element 62 that are residing in the ambient
5 section. So this figure -- or this slide shows Figures 3,
6 which is a partial exploded view, where these ducting
7 elements called flow controllers or flow ducts 72 are --
8 the flow controllers 70 are taken away from their actual
9 position. They're shown in their actual position in the
10 cross-section view.

11 This is a vertical cross-section through the
12 upper portion of the display, where the flow controllers
13 would be housed.

14 Q. And you're referring to Figure 4 there, I
15 believe?

16 A. That's correct, yes.

17 Q. Does Karppanen disclose a gas circulation device
18 in the closed loop?

19 A. Yes. In the closed loop is fan 64, is
20 disclosed, and it's a air circulation device to circulate
21 air in the space between the display element and the walls
22 of the display casing.

23 Q. Is the fan -- are the fans positioned to force
24 the circulating gas in the closed loop through the common
25 heat exchanger?

1 A. Yes, they are.

2 Q. How do you know that?

3 A. The operation of the cooling fins -- sorry. I
4 was reading in the wrong space there.

5 The airflow circulating display and equalizing
6 temperatures can be arranged by means of fans. The fans
7 force the air of the inner casing to flow past plate 46 of
8 the device. That's the front, but it makes a complete loop
9 and, therefore, the air, as I read on a previous slide,
10 passes through the fins of the first heat transfer part as
11 well.

12 Q. Do you see the reference on slide 100 to
13 Karppanen column 8, lines 17 through 19, to cooling
14 airflows between the fins?

15 A. Yes.

16 Q. How do you take that?

17 A. That's -- that applies in both places.

18 Q. Now, does Karppanen, at slide 101, claim 1f
19 refers to an air circulation device positioned to force
20 ambient air through the common heat exchanger. Does
21 Karppanen disclose an air circulation device that
22 circulates ambient air?

23 A. Yes. Karppanen discloses cooling fans 36, which
24 -- by which circulation of air through the cooling space is
25 regulated. 36 is shown in Figure 1 at the right, at the

1 lower portion. And these reside in the cooling space,
2 which is the ambient air space. So they pull air in from
3 the bottom ventilation slots, 34, pass them along the back
4 of the heat transfer parts over the device case, and it
5 exits through 34, the ventilator slots at the top.

6 Q. Do those fans 36 force ambient air through the
7 common heat exchanger?

8 A. Yes, they do.

9 Q. Is that described in the patent?

10 A. Yes, it is. It says that cooling fans 36, by
11 which regulation of air through the cooling space is
12 regulated, and it says that air -- cooling airflows between
13 the fins, heat transferred -- is transferred from the
14 cooling fins to the air space.

15 Q. Now, Dr. -- sorry, pardon me,
16 Mr. Smith-Gillespie, are you familiar with Dr. Pokharna who
17 has offered testimony in connection with some of MRI's
18 arguments in this matter?

19 A. Yes, I'm aware of that testimony.

20 Q. And are you aware that Dr. Pokharna has argued
21 that claim 1 of the '740 patent requires a heat exchanger
22 configuration with dedicated channel or overlapping plates?

23 A. I'm aware that he said that, yes.

24 Q. Do you agree with him?

25 A. No, I don't.

1 Q. Why not?

2 A. It's not stated in the claim element, first of
3 all. It just says a heat exchanger to force ambient air
4 through a common heat exchanger.

5 Q. And in any event, were the types of heat
6 exchangers described by Dr. Pokharna known in the art by
7 March of 2008?

8 A. Yes. Much earlier than March of 2008, I would
9 add.

10 Q. Are you aware of any examples of that?

11 A. Yes. There's a few that I have on the next
12 slide, I believe. So starting from a patent in 1982 to
13 Mullejeans, this looks like a thin plate cross flow heat
14 exchanger. It's Figure 2 out of Mullejeans. It's kind of
15 a large boxy thing with multiple inlets and outlets. Then
16 the Olmstead patent in 1991 shows what looks like a dual
17 cross flow heat exchanger in Figure 2A. Figure 2B is just
18 the back side of it. Again, just highlighting the numbers
19 of inlets and outlets that it has to transfer air across
20 these thin plates.

21 Q. Are you aware of any other examples in the prior
22 art to 2008 disclosing heat exchangers in the context of
23 electronic displays?

24 A. Yes, there's an example from Williams, which is
25 a display system. This patent focuses mostly on the

1 cooling of a backlight unit for an entertainment display.

2 Q. And if I may, Mr. Smith-Gillespie, just to keep
3 us all on the same page, you have in your binder RX-1397,
4 and I believe shown at slide 103. Is that the Williams
5 reference you just referred to?

6 A. That is the Williams reference, yes.

7 Q. And what does Williams disclose as may be
8 relevant here?

9 A. Williams discloses a backlight assembly that has
10 a -- that is the height of power that it needs to be
11 cooled, first, that has a mechanism that channels heated
12 air on one side of a plenum. You can see this in -- it's
13 numbered 128, the plenum, with the closed loop. So it has
14 got a closed loop of circulating air around these backlight
15 elements and through the bottom zone of a plate heat
16 exchanger.

17 And then there's additionally a top portion,
18 which -- oh, excuse me -- the bottom portion is highlighted
19 in green. And then you can see there's a top portion
20 highlighted in pink, Number 146 of the heat exchanger,
21 where ambient air is brought in and caused to absorb the
22 heat that transfers across the plate formed by a portion of
23 128.

24 Q. How does the Williams heat exchanger compare to
25 the Karppanen heat exchanger?

1 A. Very closely. I mean, there's an array of fins
2 in the recirculated air highlighted in green. I show that
3 up in Karppanen, in Figure 4, as well. Then there's
4 another array of fins that reside in the ambient flow path.
5 There's a plate between the two that prevents the airflows
6 from mixing.

7 So it comes down to the differences are probably
8 the thickness and number of fins that are in each of the
9 respective airflow paths.

10 Q. So if we were to assume for sake of argument
11 that Dr. Pokharna were right that Karppanen's heat
12 exchanger is not the same as is claimed in the asserted
13 patent, have you considered the question what
14 modifications, if any, a person of ordinary skill in the
15 art in 2008 time frame might have made to Karppanen's heat
16 exchanger in view of known heat exchangers like Williams?

17 A. Well, so, first of all, I think that it would
18 make sense to -- looking at Karppanen, for a person of
19 ordinary skill in the art to consider a higher fin density,
20 meaning more fins, in both airflows, and then perhaps, if
21 need be, adapt something, you know, though this is rather
22 large, into the rear cooling space or into the rear
23 electronics assembly space by adapting this large doghouse
24 system into that portion of the display. So there's room
25 to grow this backward to where the additional electronics

1 are.

2 Q. Would a person -- pardon me. Would a person of
3 ordinary skill in the art in 2008 time frame have had a
4 reasonable expectation of success in using the Williams
5 type of heat exchanger in the Karppanen system?

6 A. Yes, they would, since they're using something
7 that's very, very close to it already. It's an incremental
8 change. So I think the chance of success there is high.

9 Q. So could you summarize for us, please, the
10 conclusions that you have reached concerning Karppanen as
11 it relates to claim 1 of the '740 patent?

12 A. In my opinion, claim 1 of the '740 patent is
13 obvious in view of Karppanen, because it discloses each
14 element of the claim.

15 Q. Does Karppanen disclose -- turning to claim 5,
16 pardon me, turning to claim 5 of the '740 patent, again,
17 you've divided it into elements, a preamble and two
18 elements, a and b.

19 Do you see that?

20 A. I do, yes.

21 Q. Does Karppanen disclose a front display surface
22 shown at the top of slide 107?

23 A. Yes. Karppanen discloses front plate 46.

24 Q. Is Karppanen's front plate 46 spaced apart from
25 the front of the electronic image assembly shown in

1 Karppanen?

2 A. Yes, it's spaced apart by a distance of a -- of
3 this ducting 66. It says here suitable ducting has been
4 arranged between the display casing and the display
5 element, so that airflow can pass the display element
6 equalizing temperatures. And this is pointed out in Figure
7 2, to exist not only in the rear and around the edges but
8 also in the front.

9 Q. Is the space between the front plate 46 and the
10 LCD panel a front channel that forms part of the closed
11 loop path?

12 A. Yes, it does.

13 Q. Let's turn to claims 6 and 10 of the '142 patent
14 in view of Karppanen and Larson.

15 How do the asserted claims of the '142 patent
16 compare to the asserted claims of the '740 patent?

17 A. Claims -- the '142 patent includes claims of
18 both open loop and closed loop and a heat exchanger, same
19 as -- well, not same as -- as in the '740 patent. The '142
20 patent adds an additional requirement for a solar energy
21 reduction layer.

22 Q. What is a solar energy reduction layer?

23 A. A solar energy reduction layer is simply a
24 optical element that will absorb a certain amount, a
25 specified amount, of incident solar radiation, preventing

1 it to get to the display in this application.

2 Q. Were solar energy reduction layers known in the
3 art by 2008?

4 A. Yes. Solar energy reduction layers were known
5 probably since the first use of CRTs in outdoor, like,
6 military electronics, that sort of thing, so dating back at
7 least to the '50s. They primarily used neutral density
8 filters, but other types have become available.

9 Q. And in 2008, would that person of ordinary skill
10 in the art have been aware of the benefits of using a solar
11 energy reduction layer?

12 A. Yes, they would. It's -- it was well-known by
13 that time that there are two primary areas that having a
14 solar energy reduction layer helps. First is improvement
15 in display contrast, because it prevents washout of the
16 display from sunlight. And second is reducing the heat
17 load on the display.

18 Q. So let's turn to claim 6 of the '142 patent,
19 which we've got a preamble and elements a through j. Is
20 that right?

21 A. That's correct.

22 Q. Starting with the preamble and element A, does
23 Karppanen disclose a cooling system for an electronic image
24 assembly and a housing? And I know you've talked about
25 these elements before, but if you could remind us.

1 A. Yes. Karppanen discloses a cooling system for
2 an electronic image display, as I discussed in the '740
3 analysis for claim 1a. And Karppanen additionally
4 discloses a housing for the electronic image display, as I
5 discussed at '287, claim element 2a.

6 Q. I think you meant 12a there.

7 A. I meant 12a. Sorry.

8 Q. Thank you. Next, at slide 112, we see the
9 reference to a transparent cover panel in the claim?

10 A. Yes, I do.

11 Q. Where is the -- does Karppanen disclose a
12 transparent cover panel?

13 A. Yes. Karppanen discloses a transparent front
14 plate 46.

15 Q. How do you know it's transparent?

16 A. Well, it says it's transparent and it's in front
17 of the display, so you would like the light to get through
18 the display, so it makes sense that it's transparent.

19 Q. Does Karppanen disclose the open loop airflow
20 pathway recited in claim 6 of the '142 patent?

21 A. Yes. Karppanen discloses a pathway through
22 cooling space 20, as discussed in my analysis of the '740
23 patent, claim element 1b.

24 Q. Does Karppanen disclose the closed loop recited
25 in claim 6 of the '142 patent?

1 A. Yes. This I also discussed in the '740 patent,
2 that both claims 1c and -- claim element 1c and claim 5,
3 this open -- this closed loop is a circulation path around
4 the front of the display, display element 46, through
5 ducting 66, which resides behind front plate 46.

6 Q. Turning to slide 115, are there inlets and
7 outlets that allow airflow through the open loop airflow
8 pathway in Karppanen?

9 A. Yes. The open loop air path way includes
10 ventilator slots, 34, which enable air movement from the
11 outside of the device into the cooling space and from the
12 cooling space back to the outside of the device.

13 Q. At slide 116, does Karppanen disclose an air
14 circulation device along its open loop airflow pathway?

15 A. Yes. Karppanen discloses cooling fans 36 by
16 which the circulation of air through the cooling space is
17 regulated.

18 Q. Where are those cooling fans located relative to
19 ventilator slots 34?

20 A. They're located, the fans -- the fans are
21 located between the exhaust ventilator slots and the inlet
22 ventilator slots closer to the bottom by the inlet slots,
23 though, in this case.

24 Q. And I see a reference here on slide 116 to
25 cooling fans 36. What do they do?

1 A. They drive the air across the cooling -- the
2 heat transfer parts that reside in the open cooling space.

3 Q. How about in the closed loop, does Karppanen
4 disclose a gas circulation device in the closed loop?

5 A. Yes. Karppanen discloses fans 64 in the closed
6 loop space.

7 Q. What do those fans, 64, do?

8 A. They drive air around the circulation path in
9 front of the display and then along the back and through
10 the fins of the heat transfer part.

11 Q. Does Karppanen disclose the heat exchanger
12 recited in claim 6 of the '142 patent and referred to here
13 on slide 118?

14 A. Yes. As I described in claim 1, claim element
15 1d of the '740, that Karppanen discloses a heat exchanger
16 comprised of cooling elements 32 and their parts, their
17 heat transfer parts 60 and 62.

18 Q. What is your view, therefore, whether Karppanen
19 discloses all of the elements of claim 6 of the '142
20 patent?

21 A. My view is that Karppanen discloses all of the
22 claim elements of claim 6 of the '142 patent, with the
23 exception of one or more solar energy reduction layers.

24 Q. And circling back to the discussion we had a
25 moment ago, are you aware of examples in the prior art

1 before 2008 of an LCD system including a solar energy
2 reduction layer?

3 A. Yes, I am.

4 Q. And if you could look at slide 120, and in your
5 binder you'll find RX-1386. Do you recognize this
6 document?

7 A. Yes. This is the Larson patent entitled Reduced
8 Reflectance Polarized Display, issued on May 21st, 2002.

9 Q. What does Larson disclose with respect to solar
10 energy reduction layers?

11 A. Larson discloses a cover glass with an auxiliary
12 polarizer, meaning that the auxiliary polarizer is a
13 polarizer in addition to the standard front polarizer
14 that's made part of the LCD.

15 So this is shown in Figure 2 and highlighted
16 right here.

17 Q. And if you wouldn't mind, Mr. Smith-Gillespie,
18 what's a polarizer?

19 A. A polarizer is an optical element that helps
20 select from randomly polarized light, which is
21 electromagnetic waves vibrating in many directions to a
22 very narrowed or, sometimes we called it, linear
23 polarization. So there's only one polarization of the
24 random electromagnetic waves passing through the device.

25 Q. Where does the prior art Larson patent locate

1 its solar energy reduction layer?

2 A. The auxiliary polarizer is located on the
3 rear-facing surface of cover glass 4 next to an air space
4 9.

5 Q. Is Larson's auxiliary polarizer 20 configured to
6 prevent a portion of solar energy entering the transparent
7 cover panel from thermally interacting with gas?

8 A. Yes. The auxiliary polarizer 20 in Larson --
9 there's a couple different kinds of polarizers. There's
10 reflective polarizers. There's absorptive polarizers.
11 Larson discloses a very standard polarizer, an absorbing
12 polarizer, which will absorb roughly 50 percent of the
13 incident solar radiation, while allowing, if properly
14 oriented, close to 95 percent of the light coming out of
15 the LCD to pass through.

16 Q. Based on the teachings of Larson, how, if at
17 all, would a person of ordinary skill in the art in the
18 2008 time frame have modified Karppanen?

19 A. Very simply, the cover panel 46, I believe it
20 is, would just need to have a polarizer laminated to its
21 rear surface. Lamination of polarizers to glass is
22 routine. Every LCD we're looking at here has a polarizer
23 laminated to the front, as well as the back. So it's not a
24 difficult task at all to implement this.

25 Q. And why would such a person have been motivated

1 to do that?

2 A. For reasons I discussed before. The reduction
3 in transmitted energy to the display, so solar energy is
4 captured, kept from heating up -- being absorbed in the
5 front polarizer of the LCD, which would heat the LCD up.
6 Additionally, one would get the benefit of improved
7 contrast and also reduced reflectances.

8 Q. Returning to slide 122, Mr. Smith-Gillespie,
9 what are we looking at here?

10 A. This is a modification of a cross-section from
11 Karppanen that I put together to try and highlight the
12 location of the polarizer as it would be applied in
13 Karppanen. So what you see here is kind of a light orange
14 color line that goes down through the cross-section. That
15 would represent a polarizer that's attached to the
16 inward-facing surface of the front plate. And then also
17 shown is the closed loop airpath, the ducting 66, and
18 display element 26.

19 Q. Would a person of ordinary skill in the art in
20 2008 seeking to make this combination have had a reasonable
21 expectation of success?

22 A. Yes. This technique was well known in a number
23 of areas already. And as I mentioned, placing polarizers
24 on glass is very straightforward. It's a machine
25 operation. It's done, you know, daily by tens of

1 thousands.

2 So, yeah, they would have a reasonable
3 success -- chance of success. The only issue would be just
4 making sure that the polarization axes were aligned to that
5 of the LCD.

6 Q. Let's turn to claim 10, which is shown on slide
7 123. Do you see that the claim adds the requirement of a
8 solar energy reduction layer that comprises a film having
9 anti-reflection properties?

10 A. I see that, yes.

11 Q. Does Karppanen in combination with Larson
12 disclose a film having anti-reflection properties?

13 A. Yes. Larson discloses that anti-reflection
14 material may be added to the polarizer to reduce the
15 reflectance. Every air-to-glass or plastic interface has
16 roughly 4 percent reflectance. So Larson understood and so
17 did -- the person of ordinary skill in the art would
18 understand it at this time, that those extra reflectances
19 produce what's called ghost images. If you have two
20 layers, you would see like two reflections offset from one
21 another.

22 So it would make sense for a person of ordinary
23 skill in the art to include this as part of the polarizer.

24 Q. So if you could, Mr. Smith-Gillespie, summarize
25 for us, please, your conclusions concerning Karppanen and

1 Larson as they relate to claims 6 and 10 of the '142
2 patent?

3 A. Yes. Okay. So claims 6 and 10 of the '142
4 patent are both obvious in view of Karppanen with Larson.

5 Q. Next, Mr. Smith-Gillespie, I'd like to talk
6 about claims 1 and 5 of the '740 patent in the context of
7 the Yare reference.

8 I believe you have in your binder at RX-1398,
9 and you can see here on slide 127, the front cover of the
10 document. Do you recognize it?

11 A. Yes, I do. This is a published patent
12 application from the U.K. published in December -- on
13 December 1st of 2004. The named inventor is Yare.

14 Q. You can see, at slide 128, Figure 4 of the
15 reference. Do you see that?

16 A. Yes, I do.

17 Q. What are we looking at here?

18 A. This is a schematic cross-section of the device
19 described in detail in Yare. This is Yare Figure 4. And
20 it has a number of arrows showing various airflow rates or
21 airflow orientations and locations and circulations, which
22 I'll discuss in the coming slides.

23 Q. So let's go through the elements of the '740
24 patent, claim 1. We see here, having in mind the system
25 you used earlier of the preamble and element A. Does Yare

1 disclose an electronic display system?

2 A. Yes. Yare discloses display system 20, and it
3 states that the display cabinet may include a display
4 system such as a plasma display, an LCD, a TFT display or
5 CRT or an LED or projector display.

6 Q. Does -- is that -- in the case of that display
7 being an LCD display, would a person of ordinary skill in
8 the art at the time have taken that to be an electronic
9 image assembly?

10 A. Yes, they would.

11 Q. Why is that?

12 A. The LCD display receives an electronic signal
13 and basically adjusts the image presented on the display by
14 energizing, partially energizing, the plates across -- the
15 transferring plates across the cell to let light pass
16 through.

17 JUDGE BHATTACHARYYA: Mr. Stockwell?

18 MR. STOCKWELL: Objection, objection, Your
19 Honor, the witness just changed theories from his report.
20 They're now mapping the display system to element 1a,
21 whereas before they were mapping just the display item 20,
22 the panel, to this claim element, Your Honor. And that's
23 in his report, paragraph 1243, at page 25 -- I'm sorry --
24 461.

25 MR. KLINE: There are a few places we could

1 look, Your Honor. Mr. Smith-Gillespie's opinion that Yare
2 discloses an electronic display can be found at paragraph
3 1238 of his report. That display is an electronic image
4 assembly, can be found at paragraphs 1240 through 1243 of
5 his report. And he's simply reading the patent that says
6 display system at 20, which is designated by 20 in the
7 reference.

8 JUDGE BHATTACHARYYA: If you could put the
9 demonstrative back on?

10 MR. KLINE: Pardon me, Your Honor?

11 JUDGE BHATTACHARYYA: Could you please put the
12 demonstrative back on?

13 MR. KLINE: Oh, the demonstrative? Yes. Did I
14 turn the demonstrative off? I didn't mean to. Okay.

15 JUDGE BHATTACHARYYA: I'm going to ask
16 Mr. Smith-Gillespie a question.

17 Mr. Smith-Gillespie, you just testified about
18 display system, item 20. Is that right? Is item 20 an
19 element described in the patent?

20 THE WITNESS: I'm not sure I'm following the
21 question, I'm sorry.

22 JUDGE BHATTACHARYYA: You referred to the Number
23 20.

24 THE WITNESS: Yes.

25 JUDGE BHATTACHARYYA: What is 20?

1 THE WITNESS: Display, the display system called
2 out in Yare.

3 JUDGE BHATTACHARYYA: Okay. Is that actually in
4 the patent? Can we look at the patent and see where 20 is?

5 MR. KLINE: You can, Your Honor.

6 THE WITNESS: Display 20, display 20 --

7 MR. KLINE: Your Honor, if I have -- this is
8 just the front cover, Your Honor. "Display cabinet 10 has
9 a sealed air-tight compartment 30 for mounting a display
10 system 20."

11 THE WITNESS: So the word "display" and "display
12 system" are both used in the patent to refer to item 20 or
13 referred to by item 20.

14 JUDGE BHATTACHARYYA: Mr. Stockwell, are you --

15 MR. STOCKWELL: Your Honor, the witness in his
16 report testified -- in his report, sets out that it's the
17 display 20, not the display system. He points to a
18 different display 20. In his deposition, he actually
19 testified that display 20 is not shown in this figure.
20 That's why he had to annotate it.

21 JUDGE BHATTACHARYYA: All right. I'm not going
22 to -- I don't have time to sift through everything right
23 now, so you can do a motion to strike with respect to this.

24 MR. STOCKWELL: Well, what I would suggest, so
25 we can preserve this issue, is can we have a running

1 objection to these figures, and to the extent we need to
2 move to strike afterwards, we can make a motion then so
3 that you can get the testimony in and we can proceed?
4 Otherwise, I don't want to keep popping up and interrupting
5 counsel's examination over this issue.

6 JUDGE BHATTACHARYYA: All right. In general,
7 that's okay, but I would like you to identify on the record
8 which elements you believe are being changed as it goes
9 forward. So I know that display 20 is an issue, so you
10 don't have to say that again. But if there's a different
11 issue for some other element, mention it the first time.

12 MR. STOCKWELL: Yes. Yes, Your Honor. So make
13 an objection and just mention what the elements are, just
14 so you know?

15 JUDGE BHATTACHARYYA: Yes.

16 MR. STOCKWELL: Thank you, Your Honor. We will
17 do that.

18 JUDGE BHATTACHARYYA: Thank you.

19 MR. KLINE: I have to find my place, Your Honor.
20 Just give me a moment.

21 JUDGE BHATTACHARYYA: Sure.

22 MR. KLINE: Oh, I think it's here. So let's try
23 slide 129. Very good.

24 BY MR. KLINE:

25 Q. Mr. Smith-Gillespie, does Yare's display system

1 have a front portion and a rear portion?

2 A. Yes, it does. These are shown basically as the
3 extensive -- the highlighted blue zone, which constitutes
4 display 20.

5 Q. Does Yare disclose --

6 MR. STOCKWELL: Same objection, Your Honor.

7 JUDGE BHATTACHARYYA: Thank you. You may
8 proceed.

9 BY MR. KLINE:

10 Q. Does Yare disclose an open loop ambient air flow
11 path behind the rear portion of the electronic -- of the
12 display system?

13 A. Yes. Yare discloses atmospheric zone 40, which
14 is an open loop or open ambient air flow path, says that
15 air from outside cabinet 10 is drawn through vents 60 into
16 the atmospheric zone by fans 50 and then is expelled from
17 the cabinet 10 through fans 50. And that's the highlighted
18 in pink portion of the Figure 4 at left.

19 Q. Thank you. Does Yare disclose a closed loop gas
20 circulation path?

21 A. Yes, Yare discloses a sealed cabinet zone 30,
22 which includes a closed loop pathway. The -- Yare
23 discloses that the sealed zone 30 is cooled without ingress
24 of atmospheric air, and the pathway for the airflows in
25 this closed loop circulation path are shown by solid arrows

1 in the figure at left.

2 MR. STOCKWELL: Same objection, Your Honor.

3 JUDGE BHATTACHARYYA: All right.

4 MR. KLINE: Shall I just --

5 JUDGE BHATTACHARYYA: Yeah. I --

6 MR. KLINE: Sure thing. Happy to do it, Your
7 Honor. Thank you.

8 JUDGE BHATTACHARYYA: Thank you.

9 BY MR. KLINE:

10 Q. How does the closed loop gas circulation path in
11 Yare relate to the display system 20 in Yare?

12 A. In operation, the display 20 creates heat inside
13 display 20 in the sealed zone, so the airflow in this
14 sealed zone removes the heat by flowing through the -- a
15 heat exchanger that's formed in the rear portion of the
16 sealed -- the sealed circulation path.

17 Q. Is Yare's display system within Yare's sealed
18 zone 30?

19 A. Yes, it is.

20 Q. Does Yare disclose a common heat exchanger?

21 MR. STOCKWELL: Sorry, Your Honor, same
22 objection to the last question.

23 JUDGE BHATTACHARYYA: Thank you.

24 BY MR. KLINE:

25 Q. How about this one? Does Yare disclose -- well,

1 can ask it again. Does Yare disclose a common heat
2 exchanger?

3 A. Yes. Yare discloses heat exchanger 70, which
4 appears to be, from Figure 5, a folded plate counterflow
5 heat exchanger which resides in both the sealed zone shown
6 in green in Figure 5 and also partly in Figure 6.

7 And there's additionally an atmospheric zone on
8 the opposite side of the folded plate heat exchanger.
9 That's highlighted in pink in both figures.

10 Q. Is Yare's heat exchanger 70 located in the
11 pathway of both the closed loop and open loop?

12 A. Yes, it is. And that was shown on the previous
13 slide with the airflow arrows passing through in opposite
14 directions, the dotted ones in the atmospheric zone or the
15 open loop, and the solid ones in the closed loop, sealed
16 zone.

17 Q. Does Yare disclose a gas circulation device?

18 A. Yes. Yare discloses fan 80 in the sealed
19 zone -- yes.

20 Q. What does the fan 80 do?

21 A. The fan -- due to the operation of the fans, fan
22 25 and 80, and the orientation of the baffle plate, air
23 within the sealed zone is directed along one or more
24 surfaces of the heat exchanger, 70, around the baffle
25 plate, and heat is transferred there. So it takes heat

1 from the sealed zone, including the display, and passes it
2 into the heat exchanger.

3 Q. Does Yare disclose an air circulation device
4 positioned to force ambient air through the common heat
5 exchanger?

6 A. Yes. Yare discloses fan 50. The fans 50 reside
7 in the atmospheric zone and draw air through the heat
8 exchanger. It says here that the fans 50 draw air up
9 through the atmospheric zone. And you can see that the air
10 pathway goes through the heat exchanger 70.

11 Q. So what conclusions, if any, did you reach
12 concerning claim 1 of the '740 patent and Yare?

13 A. It's my opinion that claim 1 of the '740 patent
14 is obvious in view of Yare, based on the fact that Yare
15 discloses each element of this claim.

16 Q. Let's take a look at claim 5 of the '740 patent,
17 and it's shown here at 136.

18 A. Okay.

19 Q. Does Yare disclose a front display surface
20 spaced apart from the front portion of the display system?

21 MR. STOCKWELL: Objection, scope.

22 THE WITNESS: Yes, Yare shows --

23 MR. STOCKWELL: Same objection, Your Honor.

24 JUDGE BHATTACHARYYA: The same objection. All
25 right.

1 MR. KLINE: Okay. Just the same one?

2 MR. STOCKWELL: Yes.

3 MR. KLINE: Okay. Thank you.

4 THE WITNESS: Yare discloses a front surface of
5 the cabinet 10, which would in such an outdoor display not
6 be for an LCD, at least the front glass of an LCD, since
7 LCDs are known to be fragile. A person of ordinary skill
8 in the art would understand there to be a protective cover
9 glass at that location. So the display itself would be
10 spaced back behind that. Yare does disclose that air
11 circulates completely around the display. So the front
12 portion must be spaced away from the front protective
13 glass.

14 BY MR. KLINE:

15 Q. You say Yare discloses that air would circulate
16 around the display. How does it make that disclosure in
17 the figure? And the figure is on your screen.

18 A. Dotted arrows -- no. That's moving atmosphere
19 from solid arrows that have the right-angle bend on them
20 would be passing along the front of the display.

21 Q. Are you aware of --

22 MR. STOCKWELL: Same objection to that
23 testimony.

24 BY MR. KLINE:

25 Q. Are you aware of any other prior art showing

1 displays spaced apart from the front surface of their
2 cabinets?

3 A. Yes, I am. There's several including -- we just
4 saw Larson as one of them, where the display was separated
5 by an air space, and then also Heady and Pandolfi are
6 located in here.

7 Q. Thank you. So let's turn to claims 6 and 10 of
8 the '142 patent. At slide 138, with a reference to the
9 preamble of claim 6 of the '142 patent, does Yare disclose
10 a cooling system for an electronic image assembly?

11 A. Yes, it does, based on the same reasoning I
12 applied for the electronic image assembly in the claim of
13 '740, claim element 1a.

14 Q. And how about a housing, does Yare disclose a
15 housing for its electronic image assembly?

16 A. Yes. Cabinet 10 is a cabinet for mounting the
17 display system, so that's a -- that constitutes a housing.

18 Q. Does Yare disclose a transparent cover panel
19 forming a front portion of the housing?

20 A. Yare discloses a front member to the cabinet,
21 which I believe a person of ordinary skill in the art would
22 understand to be a glass -- cover glass; otherwise, the
23 image of the display would not get through. Additionally,
24 Yare says this is a sealed zone. So it can't be just open
25 to the air.

1 Q. Does Yare disclose an open loop and closed loop
2 pathway as recited in claim 6 of the '142 patent?

3 A. Yes. With regard to the open loop claim element
4 6c, I discussed this already with regard to the '740 claim
5 element 1b, and Yare does disclose this. And then with
6 respect to claim element 60, a closed loop circulation path
7 contained within the housing, et cetera, I discussed this
8 relative to '740, claim 1c, and it's my opinion that Yare
9 discloses this as well.

10 Q. Does Yare disclose an inlet for its open loop
11 airflow pathway?

12 A. Yes. Yare discloses vents 60, which are
13 discussed at column 4, 1 through 11. Vents 60, air is
14 drawn in through vents 60 into the atmospheric zone 40 by
15 fans 50, and then also there's an exhaust, the air is then
16 expelled from the cabinet 10 through fans 50. So that's
17 shown in Figure 3 as well.

18 Q. Is that the Figure 3 shown at slide 142?

19 A. That's correct.

20 Q. And those vents 60 that you mentioned, are those
21 the vents 60 shown on slide 142 correlated with Figure 2 of
22 Yare?

23 A. Yes, that's correct.

24 Q. Does Yare disclose an air circulation device
25 positioned along its open loop airflow pathway between the

1 inlet and the outlet?

2 A. Yes, Yare discloses -- we're talking about the
3 fan now. All right.

4 Yare discloses exhaust fan -- or fan 50 at the
5 exhaust from the open loop of the atmospheric zone. The
6 fans 50 draw air up through the atmospheric zone 40. And
7 that's at paragraph -- or column 4, 11 through 16.

8 Q. Are the fans 50 positioned between the inlet and
9 exhaust that you mentioned a moment ago?

10 A. Yes. So the exhaust is on the outlet side of
11 the fan. So the fan is located downstream of the inlet and
12 upstream of the exhaust support.

13 Q. Do those fans 50 force ambient air through
14 Yare's open loop pathway?

15 A. Yes, they do.

16 Q. Turning to slide 144, does Yare disclose a gas
17 circulation device in the closed loop?

18 A. Yes. Air is circulated within the sealed zone
19 due to operation of fans 80. You see 80 highlighted in the
20 lower portion, lower portion of the figure, whatever, the
21 figure on the left.

22 Q. And does the fan 80 force air through the closed
23 loop?

24 A. Yes, it does.

25 Q. You see at slide 144 a reference to the heat

1 exchanger from the claim. Does Yare disclose the claimed
2 heat exchanger?

3 A. Yes. Yare discloses a heat exchanger that
4 resides in both the atmospheric zone and the sealed closed
5 loop zone. This is heat exchanger 70.

6 Q. Does Yare disclose one or more solar energy
7 reduction layers located at the transparent cover panel?

8 A. No, Yare does not disclose the solar energy
9 reduction layer element.

10 Q. Would a person of ordinary skill in the art in
11 2008 have been motivated to add a solar energy reduction
12 layer such as disclosed by Larson, which you talked about
13 earlier, to Yare's cabinet?

14 A. Yes, I believe they would be for the same
15 reasons discussed, reduced heat load, better display
16 contrast, reduced reflectances.

17 Q. So looking -- would a person of ordinary skill
18 in the art have had a reasonable expectation of success
19 incorporating a solar energy reduction layer into Yare's
20 display?

21 A. Yes, they would. It's a straightforward
22 modification. There's already going to be a cover glass
23 that would be easy to modify by applying the principles
24 disclosed in Larson.

25 Q. So looking to claim 10 of the '142 patent, which

1 is shown on slide 147, does Yare in combination with Larson
2 disclose at least one of, said one or more solar energy
3 reduction layers comprise a film having anti-reflection
4 properties?

5 A. Yes. Larson discloses an auxiliary polarizer,
6 which could have -- which Larson states could include an
7 anti-reflective layer on it. So, yes, Larson discloses
8 that as well.

9 Q. Would a person of ordinary skill in the art at
10 the time have been motivated to add that film with an
11 anti-reflection property to Yare's display?

12 A. Yes, as I stated before, the problem with, like,
13 ghosting, reflected images is a real issue. And adding
14 anti-reflection films to reduce those reflectances is a way
15 to solve that problem. So they would be motivated to do
16 so, yes.

17 Q. So could you summarize for us, please,
18 Mr. Smith-Gillespie, the conclusions that you reached
19 concerning Yare as it relates to the claims 6 and 10 of the
20 '142 patent?

21 A. Yes. It's my opinion that claims 6 and 10 of
22 the '142 patent are obvious in view of Yare with Larson.

23 Q. So I asked you what feels like hours ago now,
24 Mr. Smith-Gillespie, whether you were aware that MRI has
25 argued that there are certain secondary considerations that

1 weigh against a finding that its patent claims were
2 obvious.

3 Do you recall that?

4 A. I do recall that, yes.

5 Q. What secondary considerations of non-obviousness
6 did you consider that MRI has argued?

7 A. There are four here, long-felt but unmet need,
8 failures of others to solve the same problem, copying of
9 product, and industry praise.

10 Q. Did you reach any conclusions in that regard,
11 whether any of these considerations suggest that the claims
12 are not obvious?

13 A. Yes, I have.

14 Q. What conclusions have you reached?

15 A. It's my opinion that the information presented
16 by MRI was not convincing, that there were considerations
17 of non-obviousness primarily because they did not recite
18 any specific claim elements to which the evidence for
19 unfelt need or failures of others or industry praise and
20 copying could be applied.

21 Q. Now, I understand you've also considered whether
22 claim 9 is supported by an adequate written description of
23 the '322 patent; is that right?

24 A. That's correct.

25 Q. And did you form any opinions in that regard?

1 considered during prosecution of the asserted patents,
2 correct?

3 A. Say the first part of that again, please?

4 Q. Do you know what the term "cumulative" means in
5 the context of patent cases?

6 A. Yes.

7 Q. So you didn't analyze or address in your direct
8 whether all the prior art you referenced was cumulative or
9 different from the prior art the Patent Office considered
10 before they issued the asserted patents.

11 Is that fair?

12 A. I understood that the Patent Office had relied
13 on other art and I avoided using reference to that in my
14 report.

15 Q. Okay. Are you aware that Karppanen, Yare, and
16 Larson were considered by the examiner during prosecution
17 of the '740 and the '142 patents?

18 A. I might have missed that, I guess. I don't
19 know.

20 Q. Well, let's just cover that on the record. If
21 we go to JX-4, page 6. This is the '740 patent. If we
22 kind of zoom in on the left column, there's -- there is a
23 GB 2402205.

24 Do you see that in the list of foreign patent
25 documents? It is sort of right in the middle right

1 after -- right before the Japanese.

2 A. There you go. Okay. I see that.

3 Q. That's the Yare reference, correct?

4 A. I don't know. I would have to look it up.

5 Q. That's a fair point. I'm not sure I would know
6 the number either. Let me find your slides where you talk
7 about Yare. If we go to Demonstrative 7 for Respondents,
8 slide 127.

9 Do you recognize that's the reference we just
10 looked at on the face of the patent?

11 A. Yes, I see that now.

12 Q. Okay. So if we go back to Exhibit 4 and go to
13 page 6 where we were before.

14 Exhibit JX-4, page 6. JX-4, the patent. And if
15 we go, there's an RU, and then there's a W0, and then
16 there's a W02007116116.

17 Do you recognize that as Karppanen? Again, do
18 you not know the number?

19 A. I don't know the number.

20 Q. Well, again, that's a fair -- let's see -- I can
21 just pull up the -- let's just pull up the Karppanen
22 reference here, which is RX-1351.

23 W0116116. Do you see that?

24 A. I do.

25 Q. And that was on the reference we just looked at

1 on the patent?

2 A. Okay.

3 Q. And then if we go to JX-5, page 4, and we go to
4 the right column about a third up from the bottom, you'll
5 see a 6,392,727 Larson, et al., right there at the bottom.

6 Do you see that?

7 A. Okay.

8 Q. That's the Larson reference you relied on?

9 A. I believe so, yes. 2002.

10 Q. So let's go back to your demonstrative slides,
11 Exhibit 7, on page 88.

12 THE WITNESS: Your Honor, can I take a quick
13 break?

14 JUDGE BHATTACHARYYA: Yes, definitely.

15 THE WITNESS: Thank you.

16 JUDGE BHATTACHARYYA: Is five minutes
17 sufficient? Let's break for five minutes.

18 (A recess was taken at 5:01 p.m., after which
19 the proceedings resumed at 5:07 p.m.)

20 JUDGE BHATTACHARYYA: Please be seated.

21 MR. STOCKWELL: Thank you, Your Honor.

22 BY MR. STOCKWELL:

23 Q. I want to turn back to JX-4, page 9, that's the
24 '740 patent.

25 And if we could, Ms. Gray, if we could go over

1 -- it's -- actually, I want to get to the text. It's the
2 first column. I want to get the statement between the
3 first and second columns of the text -- there you go --
4 right at the bottom of column 1, going up to column 2.

5 If we could put that bottom part of column 1
6 next to the top part of column 2, please. Just pick up
7 that paragraph.

8 And then a little bit more, that's perfect.
9 That size. Thank you.

10 So this is JX-4, the '740 patent. And I want to
11 review some of the background on this patent with you.
12 Again, it talks about the systems of the past. And right
13 at the end of column 1, it says the systems of the past
14 rely primarily on fans.

15 And then it says, "these components are
16 typically power supplies. In some cases the heated air is
17 moved into convectively thermal communication with fins."

18 Do you see that?

19 A. Yes, I do.

20 Q. And then it goes on to say, "while such heat
21 transfer systems" -- and you understand that's referring to
22 both the moving air with fans through sidewalls with holes,
23 as well as the fins, correct?

24 A. Did you say "sidewalls with holes"?

25 Q. Yeah, okay. We will keep this simple. Where it

1 says "such heat transfer systems," you understand that's
2 referring, in part, to the system where heated air is moved
3 into convectively thermal communication with fins, right?

4 A. Yes.

5 Q. It says, those systems have enjoyed a measure of
6 success in the past, improvements to displays and new
7 display applications require even greater cooling
8 capability, correct? Do you see that?

9 A. I see that.

10 Q. Now, in the next section, the patent describes
11 embodiments of the invention that include a heat exchanger,
12 if we go look at column 2, lines 42. Do you see that, the
13 summary? Do you see the summary?

14 A. I do. I see that, yes.

15 Q. And it's describing exemplary embodiments with
16 two separate flow paths for gas through an electronic
17 display. This is talking about the closed loop and the
18 open loop. Do you see that?

19 A. I do.

20 Q. And it talks about the closed loop travels
21 across the front surface, continues to the rear, where it
22 may enter a heat exchanger, finally returning to the front
23 surface.

24 Do you see that?

25 A. I see that, yes.

1 Q. And you would agree that the heat exchanger
2 that's shown and described in the '740 patent, that does
3 not include the solid fins of the prior art, correct?

4 A. It includes fins, and they are solid. I guess
5 what are you trying to say?

6 Q. Is it your testimony that the heat exchanger
7 that's disclosed and pictured in the '740 patent has solid
8 fins?

9 A. The fins are made out of solid metal, yes.

10 Q. They are not hollowed to allow air to flow
11 through inside the fins?

12 A. I don't think that's the way they are
13 configured. I think they are configured as an array of
14 very thin plates.

15 Q. And is there not space inside of the fin plates
16 for air to flow?

17 A. There is.

18 Q. Okay. And the fins that the background was
19 talking about, you understood those to be solid metal fins,
20 right?

21 A. That the '740 background is talking about?

22 Q. Yes.

23 A. Okay.

24 Q. You understand the '740 background was talking
25 about, when it was describing the prior art, solid metal

1 fins?

2 A. Well, it only described part of the prior art.
3 That's where I'm having a problem answering your question.

4 Q. We just went through the background section,
5 sir, and it talked about how there were fins in the prior
6 art. You understand that was solid metal fins, correct?

7 A. Yes.

8 Q. And those fins did not have any interior space
9 to allow air to be inside the three dimensions of the fins,
10 correct?

11 A. Air is between the fins.

12 Q. Yes. But it's not inside them?

13 A. It's inside the fin array.

14 Q. It's not inside any one particular fin; is that
15 fair?

16 A. I think it mischaracterizes it because in a
17 typical heat exchanger, there's a pair of fins that air
18 goes between.

19 Q. I'm not talking about between fins, sir. Let's
20 take one fin, okay?

21 A. Okay.

22 Q. The prior art they're talking about is a solid
23 metal one fin. There's no air inside that fin, right?

24 A. Okay.

25 Q. No. Do you agree with that? You can't just say

1 "okay."

2 A. Well, the --

3 JUDGE BHATTACHARYYA: Mr. Stockwell --

4 THE WITNESS: Well, you're saying that that's
5 the case. And I'm saying if the fin is thin, and they are
6 attached to plates, then that's prior art.

7 BY MR. STOCKWELL:

8 Q. Okay. And I'm just trying to -- sorry, Your
9 Honor. I didn't mean to keep going. I will stop and let
10 you --

11 JUDGE BHATTACHARYYA: I just thought that it was
12 a little bit -- just tone it back a little bit.

13 BY MR. STOCKWELL:

14 Q. I will do, Your Honor. Thank you. All I'm
15 trying to understand is the fins in the background are
16 solid. There's no air inside the fin, right? Not between
17 the fins, just inside the fin.

18 A. I disagree with that. This is referring
19 generally to prior art.

20 Q. Okay. That's not your understanding of what the
21 background is talking about?

22 A. Would you like to show me that section again?

23 Q. No, I think we've covered this.

24 I want to move to the Yare reference, which you
25 talked about today. If we go to your demonstratives, slide

1 129. So this is -- you recall presenting this slide on
2 direct, correct?

3 A. Yes, I do.

4 Q. And, let's see, this is the front portion that
5 you presented today, correct?

6 A. That's correct.

7 Q. And the display system is everything that you
8 have labeled in blue, correct?

9 A. Yes. It's display 20.

10 Q. And you -- and you've got the front portion
11 right at the front of the blue, and the rear portion right
12 at the back of the blue, correct?

13 A. The rear portion, yes, of the -- yes.

14 Q. And you read Dr. Pokharna's expert report in
15 this case, correct?

16 A. Yes.

17 Q. And you compared your report to Dr. Pokharna's
18 report?

19 A. Okay. Yes.

20 Q. Now, I want to pull up and put next to this
21 slide page 461 of RX-256, which is your report. There's a
22 figure in your report. I want to put those side-by-side.
23 Not the text, the figure. It should be the next page.
24 461. That figure.

25 If you could blow up just that figure. So you

1 would agree the annotations of the figure on the left that
2 is from your expert report differ from the annotations of
3 the figure on the right that you presented today, correct?

4 A. Yes, I do.

5 Q. And the annotations in the figure on the left,
6 there's a rectangular blue box in there, correct?

7 A. That's correct.

8 Q. And you drew that box and put it in there,
9 correct?

10 A. Yes. And I explained in my report about that.

11 Q. That was not, this blue box -- there was no box
12 inside of the Yare reference, correct?

13 A. That's correct.

14 Q. And you took this arrow 20 and you kind of
15 extended it. There's some red there to point past the
16 front line of the drawing to the blue box, correct?

17 A. That's correct.

18 Q. And you shaded in, for the alternative
19 annotation on the right, you shaded in all of the -- I
20 don't know what this is, a trapezoidal-shaped blue, do you
21 see that?

22 A. Yes.

23 Q. You shaded all of that blue, instead of this
24 rectangular box, correct?

25 A. Correct.

1 Q. And the area labeled as 20 in the slide you
2 presented today is bigger than the rectangular box in your
3 report, correct?

4 A. That's correct.

5 Q. So if we go -- let's go to the RDX-7.131. Put
6 that on the right side of the screen, and have page -- the
7 image on page 464 of Exhibit 256 on the left side of the
8 screen.

9 If you could put that on the right. It is the
10 image on page 464. There we go. Thank you.

11 Okay. So you would agree the annotated figure
12 on the left differs from the annotated figure on the right
13 presented today at slide 131 of your demonstrative,
14 correct?

15 A. That's correct.

16 Q. And the green portion in your annotated figure
17 on the left that's in your report goes all the way around
18 the blue box, correct?

19 A. Yes, it does.

20 Q. And what you have presented today, the green
21 portion doesn't go all the way around the box, correct?
22 Sorry, it does not go all the way around the blue portion
23 in slide 131, correct?

24 A. It does not.

25 Q. Now, you labeled the green area in your report,

1 this item 30, as the sealed zone closed loop, right?

2 A. That's correct.

3 Q. And that sealed zone closed loop shown on the
4 annotation on the left is different than the sealed zone 30
5 closed loop shown in the annotation on the right, correct?

6 A. No.

7 Q. I'm just talking about the images are not
8 different, these are the same?

9 A. These are just coloring difference.

10 Q. Okay. And the coloring difference is on the
11 left, it goes all the way around the display box that you
12 drew, correct?

13 A. The zone 30 is the same in both.

14 Q. Okay. Well, on the left there's a blue box,
15 right?

16 A. Yes.

17 Q. And you drew that and labeled it the display?

18 A. I did.

19 Q. Okay. And there's green that goes all the way
20 around the blue box, correct?

21 A. There's green all around it.

22 Q. And the slides -- the slide that you presented
23 on the left -- when did you render your report in this
24 case, do you remember?

25 A. No, I am having trouble with dates right now.

1 Q. Well, you didn't have -- you didn't have the
2 slide on the right that you presented in Court at the time
3 of your report, correct?

4 A. No, I did not.

5 Q. You didn't have it at the time of your
6 deposition?

7 A. I didn't.

8 Q. And is this -- is this week the first time you
9 have put together the slide on the right?

10 A. Yes.

11 Q. Now, if we go to page 465, if you can blow up
12 paragraph 1254 in the report, if we could blow up that
13 first paragraph. It says, "In the annotated Figure 4
14 above, the display 20 is highlighted blue." That's what we
15 were just looking at, the figures on the left, correct?

16 A. Right.

17 Q. And you say "but is not actually illustrated in
18 Figure 4." Do you see that?

19 A. I do see that.

20 Q. And you go on to say, "However, a POSITA would
21 know that this is the most logical location for the
22 display." Do you see that?

23 A. I do.

24 Q. And you say, "From a design perspective, this is
25 seemingly the best, if not the only, option for where the

1 unpictured LCD would be placed."

2 Do you see that?

3 A. I see that.

4 Q. And if we go to page 459, paragraph 1240, again,
5 you're talking about Yare's system, right at the first
6 sentence, "Yare individually and in view of the knowledge
7 of a POSITA discloses this claim element because Yare's
8 system includes a display 20 that may be an LCD display."

9 Do you see that?

10 A. I do.

11 Q. And if you go to the paragraph 1243, your
12 opinion was that Yare's LCD display 20 has a front portion
13 and a rear portion as shown in the annotated Figure 4
14 below. Do you see that?

15 A. I do.

16 Q. And you go on to say, "As discussed below for
17 claim element 1c, the front surface of the display 20 is
18 spaced apart from the front surface of the cabinet 10, to
19 allow circulation air through the gap between the front of
20 the display and the front surface of the cabinet 20 as
21 indicated by the L-shaped arrows in original Figure 4."

22 Do you see that?

23 A. I do, yes.

24 Q. So if we just go back to the annotated figure,
25 it's the next page. So you are saying this box is the

1 display, and the airflow went all the way around the blue
2 box. Is that a fair summary of what your report stated?

3 A. Yes. And that's what Yare says as well.

4 Q. Well, I'm not asking you about what else you may
5 have said in court. I'm just saying that's what your
6 report stated?

7 A. Yes.

8 Q. So if we go to page 465 of the report -- I'm
9 sorry, I'm on the wrong page. Page 486 of the report,
10 paragraph 1296.

11 Here you are showing the alleged front channel
12 between the front of your box and the cabinet's front
13 surface with dotted lines, correct?

14 A. Yes.

15 Q. If we turn to your slides, demonstrative exhibit
16 7, slide 136, so these dotted lines are now what you're
17 indicating to be the display system, correct?

18 A. Roughly. These are very schematic, as we
19 discussed earlier.

20 Q. And you have no label here for the front
21 channel, do you?

22 A. No, I do not.

23 Q. So the original blue box is gone, and you've now
24 labeled these dotted lines as the front or -- sorry -- as
25 the display system, and you have no label for front

1 channel. Is that fair?

2 A. That's correct.

3 MR. STOCKWELL: I will pass the witness. Thank
4 you, Your Honor.

5 JUDGE BHATTACHARYYA: Thank you.

6 Mr. Kline, it is 5:26. I would like to finish
7 with this witness, if possible, today, but --

8 MR. KLINE: We are on the same page, Your Honor.

9 JUDGE BHATTACHARYYA: Okay.

10 MR. KLINE: Yes, thank you. And I think nobody
11 feels that way more strongly than Mr. Smith-Gillespie.

12 Could I ask to pull -- have your slides,
13 counsel, the demonstratives?

14 MR. STOCKWELL: Ask Ms. Gray for whatever you
15 need. Do you need a copy?

16 MR. KLINE: I was going to use the ELMO, but I
17 marked mine up. Thank you. Maybe we will try this and be
18 mindful of the time.

19 REDIRECT EXAMINATION

20 BY MR. KLINE:

21 Q. Mr. Smith-Gillespie, do you recall seeing this
22 figure during your direct examination?

23 A. My cross-examination?

24 Q. Thank you very much. During your cross -- it is
25 late -- your cross-examination?