IN THE UNITED STATES DISTRICT COURT

IN AND FOR THE DISTRICT OF DELAWARE

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LG ELECTRONICS U.S.A., INC., and LG ELECTRONICS, INC.,	:	Civil Action
Plaintiffs,	:	
v.	:	
WHIRLPOOL CORPORATION,	:	
Defendant.	:	08-234(GMS)
WHIRLPOOL CORPORATION, WHIRLPOOL PATENTS COMPANY, WHIRLPOOL MANUFACTURING CORPORATION, and MAYTAG CORPORATION,	:	
Counterclaim Plaintiffs,	:	
v.	:	
LG ELECTRONICS U.S.A., INC., LG ELECTRONICS, INC., and LG ELECTRONICS MONTERREY MEXICO, S.A., DE, CV,	:	
Counterclaim Defendants.	:	

- - -

Wilmington, Delaware
Tuesday, March 2, 2010
8:45 a.m.
Trial - Day Two

- - -

BEFORE: HONORABLE GREGORY M. SLEET, Chief Judge,
and a Jury

APPEARANCES:

RICHARD K. HERRMANN, ESQ.
Morris James
-and-
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ANAND K. SHARMA, ESQ.,
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Counsel for Defendant and Counterclaim Plaintiffs

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THE COURT: Good morning.

(Counsel respond "Good morning.")

THE COURT: Ms. Walker tells me there are some issues.

MR. COYNE: Yes, Your Honor, there are.

THE COURT: Mr. Coyne.

MR. COYNE: Your Honor, there are three possible issues. We are trying to work through one of them.

THE COURT: Let's talk about the issues that need to be addressed before the jury comes out at 9:00.

MR. COYNE: That is what I am going to do right now, Your Honor.

Last night we were working on the exchange of the protocol of exhibits. We have the stipulation. In the stipulation we agreed you will identify only the exhibits that in good faith you intend to use with the witness.

On January 7th, when we had our discussion here at the pretrial conference, we had specifically decided -- Mr. Partridge had actually recommended it, Your Honor said you preferred it and I said I definitely prefer -- that we not have the record loaded up with a bunch of exhibits that are shuffled in about which there has been no substantive testimony for the jury to make sense of it. I thought we were in agreement.

THE COURT: The exhibits for the witness book or

the jury book?

MR. COYNE: For the witness book. We got a designation book for Mr. Voglewede of 1,823 exhibits to be used with Mr. Voglewede today. That is exactly the kind of shoveling evidence into the record and burdening the jury which I thought we all agreed was not going to happen.

THE COURT: I don't know if I misunderstood or understood the issue correctly. I don't remember the discussion.

However, it seems to me, from my perspective, the most concerning matter is the jury notebook and what's going to be placed in front of the jury for their consideration.

If one of the parties or both want to load up exhibit books, as long as we are not talking about displaying those exhibits to the jury, you will forgive me, I don't much care. What is the concern?

MR. COYNE: The concern is that we are going to have testimony from the witness who says, oh, yes, I did a lot of work on this; here is 182 exhibits that reflect the amount of work I did on it.

THE COURT: You are concerned about the atmospherics associated with that?

MR. COYNE: Your Honor, two concerns. No. 1, he rattles off a list, puts a demonstrative or timeline up, and

rattles off a list of exhibits. They jot them all down and now we have the jury looking for 182 exhibits during their deliberations.

THE COURT: I am not going to allow either party to mislead this jury or to confuse them. If I think or you, either side, thinks there is some gamesmanship afoot, you need to object. I guess that is what you are doing right now.

MR. COYNE: It is, Your Honor.

THE COURT: In sort of a preemptive way. But I don't need issues just to have issues, counsel. It seems to me this is something if it occurs during the course of these proceedings, you need to bring it to my attention. I will deal with it. But I am not going to tolerate gamesmanship in my courtroom. That is to both sides. That is not just directed to you, Mr. Coyne. I just as soon not have to deal with these nit-picky, death-by-a-thousand issues, if you don't mind.

MR. COYNE: Your Honor, that is it.

MR. HERRMANN: Your Honor, I mentioned to the Court that we are going to have a joint interpreter.

THE COURT: Yes.

MR. HERRMANN: Dr. Lee will be speaking in English today, but there is going to be an interpreter available to help just in case. Your court deputy and I

have talked about where that is going to be. Would Your Honor like a microphone for that witness? I think the Court has a portable microphone, a wireless microphone.

THE COURT: Is he going to be actively participate in this proceeding?

MR. HERRMANN: He very well might, if he is needed for that particular witness.

THE COURT: For the benefit of both sides, Ms. Walker runs the courtroom. I don't micromanage those kind of issues.

MR. HERRMANN: I understand. But she is not here right now.

THE COURT: Bring it up with her. She is perfectly competent and capable. She's a wonderful courtroom deputy.

MR. HERRMANN: Should the interpreter be sworn in?

THE COURT: Mr. Herrmann, how many times have you been in my courtroom? We should swear the interpreter. If the interpreter is going to participate, we actually have an oath.

MR. HERRMANN: Yes, sir.

THE COURT: All right.

(Recess taken.)

THE COURT: Ms. Walker.

(Jury enters courtroom at 9:09 a.m.)

THE COURT: Good morning, members of the jury. Please take your seats.

Mr. Coyne.

MR. COYNE: Thank you, Your Honor.

Ladies and gentlemen, good morning.

We will now be calling our next witness in the case, who is Dr. Manny Lee. He will be talking about the invention of the '121 patent.

Your Honor, LG calls Dr. Lee to the stand.

THE COURT: All right. Dr. Lee.

THE INTERPRETER: Good morning, Your Honor, Korean interpreter Albert S. Kim.

THE COURT: Good morning, sir. I have been advised of your presence.

(At this point the interpreter, Albert S. Kim, was sworn.)

... Myung Ryul Lee, having been duly sworn as a witness, was examined and testified as follows ...

THE COURT: You may inquire, Mr. Coyne.

DIRECT EXAMINATION

BY MR. COYNE:

Q. **Good morning, Dr. Lee.**

A. **Good morning.**

Q. **Mr. Kim is here and available for you as an**

interpreter today, but I am going to ask you, are you willing to try to testify for the jury today in English?

A. **Yes, because I would like to better communicate with the jury today, so I will do that.**

Q. **If you get stuck on a word or a phrase or you need an interpretation of the sentence, please just note that to Mr. Kim and he will be happy to do that.**

THE COURT: Hold on, Mr. Coyne. I think Mr. Herrmann would like to distribute these books.

(Witness notebooks distributed to jury.)

BY MR. COYNE:

Q. **Doctor, like I say, if you get stuck on a word or phrase and you don't understand the question, either mine or Whirlpool's lawyers, please ask Mr. Kim. He will be available for you.**

A. **Okay.**

Q. **How do you feel about trying to testify in English today?**

A. **I am still nervous, but I will try that.**

Q. **What is the highest --**

THE COURT: Mr. Coyne, why don't we wait a second while Mr. Herrmann and Ms. Walker get these books distributed.

MR. COYNE: Yes, Your Honor.

THE COURT: All right.

BY MR. COYNE:

Q. **What is the highest level of education that you achieved?**

A. **I got a Ph.D. in mechanical engineering from the University of Wisconsin.**

Q. **When did you get that?**

A. **It was 2001.**

Q. **When did you finish your degree? I just asked you that.**

Was your course work in English during that study?

A. **Yes. I did that in English.**

Q. **Where do you work?**

A. **I work at home appliance laboratory at LG Laboratories.**

Q. **What do you do there?**

A. **I am in charge of the refrigeration system, freezers in the home appliance laboratory.**

Q. **When did you start working for LG?**

A. **I joined LG in 1988.**

Q. **What were you doing at that time when you started?**

A. **First two years I worked for the air conditioning, and then I moved to the refrigeration research.**

MR. COYNE: Your Honor, I would like to hand out to the jury -- we have agreed to a format for the jury

books, with the witness sheet, so that the jury can put them in their books.

THE COURT: Very well. Do you want the jury to put that in the front of the notebook? If you can just put those behind the first tab, the tab for LG witnesses.

MR. PARTRIDGE: We discussed there is two tabs, one for LG witnesses and one for Whirlpool witnesses. The patents are in the book and there is note paper in the back.

THE COURT: Good.

MR. COYNE: Thank you, Your Honor.

BY MR. COYNE:

Q. **Dr. Lee, what is your current title at LG?**

A. **I am the research fellow, vice president position, in charge of the refrigeration system group.**

Q. **Why did you go to work for LG in the first place?**

A. **LG is a manufacturing company. They are interested in the product innovation. And also they focused on the customer, creation for the users. So they give us a chance to engineer, improve their ability, and make new technology.**

So I enjoy the time with LG, so I like LG very much.

Q. **And, sir, do you have any patents that you are named as an inventor on?**

A. **Yes. I have many patents.**

Q. **How many Korean patents?**

A. **Almost, over 130 patents I have.**

Q. **How many U.S. patents?**

A. **About 35 U.S. patents I have.**

Q. **How many patents does your refrigerator research lab file each year in the United States?**

A. **We filed over 300 patents for the refrigerator only.**

Q. **Three hundred?**

A. **Yes.**

Q. **Sir, one of the dates that has been significant in this case is 2001. How many refrigerator models was LG selling into the United States, not models, but types, like on the board over here, into the United States in 2001?**

A. **I don't know the exact number. But about -- the first two -- the first part, the top-mount freezer, is a major product to sell to United States. And we just used to sell it, 20,000 or that amount of the refrigerator unit.**

Q. **What styles of refrigerators is LG selling into the United States today?**

A. **We are selling all types, the top-mount freezer and the side-by-side, and the two-door bottom freezer and the four-door bottom freezer, we sell to the United States.**

[redacted]

Q. **How do you explain LG's growth from 2001 to 2010?**

A. **Yes. As I mentioned before, LG always focused on the value creation for the customer. We investigated many, many times to what the customer wanted, really, and we found out the customer needs. Then we put it to the research area. And then we developed innovative and new and better and different product them. Then you can get so well processes at that time.**

Q. **What kinds of processes do you use in the research and development lab to bring these types of new products to your customers?**

A. **Actually, we have two different ways of doing this. The first one is -- the first one is, it comes from the customer. During the investigation of the customer, we try to find out from the customer what the customer wants. Then we have a product patent group, doing research for that. Then it's transported to the center we developed for the customer.**

The other ways we tried to find the in the process the seeds to give to the engineer, the maker, a new idea. And they do -- they physically test it. And if it works, then we put into the product planning group to investigate this constant visibility, whether the customer wants it or not. So if the customer really likes it, then we will make the product.

Q. **The word you are saying is "seeds," like a seed**

growing into a plant?

A. **Yes. Seed needs to bring into a plant, like an engineer's idea growing to the commercialized product.**

Q. **I would like to turn to the '121 patent. Can you bring up PTX-001?**

Sir, what is this document?

A. **This is the patent, U.S. patent. I filed it. It is on the retractable dispenser and the tray, with the mechanical driving mechanism.**

Q. **There is a lot of names under "Inventors." What were all those people doing?**

A. **Those people, including my name, I was part of this team, the leader, and the last of them is my engineer.**

Q. **What did you personally contribute to the invention of the '121 patent?**

A. **I suggested to develop or get some idea on the retractable and the rotating type of the ice dispenser.**

Q. **Where were you working physically? Where were you and your team working when you were doing the work that led to this invention?**

A. **At the time, we have a product team. As I was in it. Then we have an every-day meeting to get a new idea. And you have a small room, one part of one-quarter of this court size. We have tables to place on the wall. And then there is one around the table, in the middle of the room. And**

we -- when you turn around, then you can talk to each other.

So we have a really good time at that time, because we get so many ideas coming up to -- we think about things for the customer. This is something the customer wants or this is really good or this is really fantastic technology, or not. So we discuss it so many times, and you get so many new ideas.

Q. **What was the mood in the room when you were working on this?**

A. **At the time it was very fundamental, and we enjoyed the time. And it was so exciting to make new things.**

So it was really good for the engineers.

Q. **What did you do with all these ideas that you generated after you had generated them?**

A. **Pardon me?**

Q. **What did you do with all of these concepts? What is the next thing you did with all of these concepts?**

A. **Once we made this concept and transferred to the product planning group, we discussed with them, you can make a real product or not, and we have to investigate whether the customer wants it or not.**

And then we filed a patent, and later on we tried to make it commercial.

THE COURT: Mr. Coyne, I may have missed the time frame. When are we talking about?

MR. COYNE: Your Honor, I am sorry.

THE COURT: You can have the witness identify it.

BY MR. COYNE:

[redacted]

Q. **Can we bring up PTX-348, please?**

What is this document, Dr. Lee?

A. **This is the brainstorming work. I attended the meeting, final meeting.**

Q. **Did you do anything with the concepts that you had developed at this brainstorming workshop?**

A. **Yes. We gave around new ideas for the new product.**

Q. **Can we go to pages 4 and 25, please?**

Dr. Lee, we see up here a number of boards.

What do those have to do with the concepts that you had indicated you were working on?

A. **Most of the concepts we gave them to make a drawing. So what is the point of the question?**

[redacted]

THE COURT: Did they give you a pointer?

MR. COYNE: May I approach the witness, Your Honor?

THE COURT: Yes. You may approach freely, Mr. Coyne.

BY MR. COYNE:

Q. **You may continue.**

A. **This one is one of the concepts related to the patent '121.**

Q. **Do you recognize any of the images on that page as relating to the concepts?**

A. **This is a kind of dispenser. It is not a clear picture. But this is one of the retractable trays. And this is also the retractable spigot, this is the driving mechanism.**

This is also kind of that. And this is also the thing that related to the patent '121.

Q. **Sorry for the quality of the sketches. We will get to**

a more complete rendering in the next report.

Is there any other description in the report of this meeting about the mechanical drive mechanism?

A. **Yes. You can see the rest of the idea.**

Q. **Can you bring up page 31, please?**

Is there anything in here?

A. **Yes, in here. This is the description of the idea we made. So it says the CD case opening. It means when you touch a button, the dispenser comes out, pops out.**

So let's go to the right side. Well, the level cup is open. When you use the CD cup and some part will push it, or push the button, then the area of the patent comes out. So it's the same operation. So this is the concept, automatic or mechanical drive mechanism.

Q. **Can we go to PTX-349?**

What is this report?

A. **This is the idea of gathering from the meeting. We are putting all our ideas into the report.**

Q. **Is there anything in this report about the ideas that ended up being in the '121 patent?**

A. **Yes. There is more specific drawing there.**

Q. **Can we go to page 53, please?**

A. **This is that.**

Q. **What does this show?**

A. **It shows that when you push this part, then this**

spigot and the ice-dispensing system comes out. Also, the tray comes out. So it shows where about you have retractable dispenser and tray with the mechanical driving mechanism.

Q. **Can we go to report PTX-353, please?**

What is this document, sir?

A. **This is the new concept for the product. The product and planning report.**

Q. **Does that include a description of the '121 invention?**

A. **Yes.**

Q. **Can we go to page 90, please?**

Is there anything on this page?

A. **The second drawing is the same as you have seen before. There is the mention about if you push it once, when needed, it slides out of the refrigerator, and you can get water or ice.**

So it describes how we can use that system, and it shows we have a mechanical driving mechanism. So this is that idea sketch.

Q. **Did you file a patent application for this idea?**

A. **Yes.**

Q. **If we can bring up PTX-96, please.**

Do you recognize there document, Doctor?

A. **Yes.**

Q. **What is it?**

A. **This is the patent, Korean patent we applied for.**

Q. **Did you apply for a U.S. patent as well?**

A. **Yes.**

Q. **Could we bring up PTX-1 again?**

Is this the U.S. patent you applied for?

A. **Yes.**

Q. **One last question, Dr. Lee. What are the benefits to the consumer of this invention?**

A. **I think this is really innovative and one that is a great invention, providing many benefits to the customer.**

First, this gives a good design, because as you can see, this side-by-side refrigerator, there is the one big concave box, dispenser. Sometimes this looks real. But the -- this invention gives -- minimized that concave box. So it gives a neat -- gives a neat design and better look.

The other thing is, it gives -- it saved us space. It means we can reduce the concave box, you can use the most space, more interior space we can use. So it gives more space to the customer.

And the other thing is, it gives, also, the convenience. When you touch this button, then the dispenser comes out. And you can use any size of the container, big one or large pot or any other container, you can use that.

So it gives a lot of convenience. And then one more thing is it gives -- the part of the spigot and the

dispenser area hiding into the surface. So you cannot touch it with any pollutant in the area or hands. So it gives more advantage to the customer.

So I think this is a wonderful invention I made. And then it gives the perfect solution of the ice dispenser to the customer.

MR. COYNE: Thank you, Dr. Lee.

No further questions, Your Honor.

THE COURT: Mr. Partridge, you may cross-examine.

MR. PARTRIDGE: Thank you, Your Honor.

CROSS-EXAMINATION

BY MR. PARTRIDGE:

Q. **Good morning, Dr. Lee. I know you just observed I brought some documents to the table. Lest you fear we are going to go through all those papers, don't be afraid that we are going to do that. Do you understand?**

A. **Yes.**

Q. **Okay. I will try to speak slowly, so that you can understand my questions.**

Let me begin with where you ended your testimony when you were examined by Mr. Coyne. Do you understand what I have just said?

A. **What?**

Q. **I am going to begin with where you finished with Mr.**

Coyne.

A. **Yes.**

MR. PARTRIDGE: May I approach the refrigerator, Your Honor?

THE COURT: Yes.

BY MR. PARTRIDGE:

Q. **At the end of your examination, you pointed to this refrigerator, correct, with the laser pointer?**

A. **Yes, as an example of just side-by-side refrigerator, I testified.**

Q. **As you know, this is a Whirlpool refrigerator. It is Defendants' Physical Exhibit 26.**

A. **Yes.**

Q. **And on this Whirlpool refrigerator is a movable tray. Yes?**

A. **Yes.**

Q. **Moved manually?**

A. **Yes.**

Q. **And there is a water spigot moved manually as well, to push and turn, correct?**

A. **Yes.**

Q. **So this refrigerator has both movable tray, movable water spigot, or water dispenser, correct?**

A. **Yes.**

Q. **Now, you understand, Dr. Lee, that Whirlpool contends**

that it invented this manual spigot, water dispenser, and manual tray before LG. You understand that's what we contend, correct?

A. **I don't think so. We have a patent before you made.**

THE COURT: The word "contend" may be problematic.

MR. PARTRIDGE: Yes. Let me try it another way.

BY MR. PARTRIDGE:

Q. **Do you understand that it is our position, Whirlpool's position, that it invented the movable tray and the movable water dispenser first?**

A. **I don't know about that.**

Q. **I am not asking you for your opinion as to whether we were first. I am asking you if you understand that we say that.**

MR. PARTRIDGE: Mr. Kim.

(Witness consults interpreter.)

THE WITNESS: Now, yesterday I heard from you.

BY MR. PARTRIDGE:

Q. **Yes, exactly. In my opening statement. You were present in the courtroom?**

A. **Yes.**

Q. **So you understand that's what we say happened here?**

A. **Yes.**

Q. **Thank you.**

Now, what I would like to do with that as background is try to understand some of the invention dates and the inventors for your '121 patent. Do you understand?

A. **You said yesterday two years ago. You said like that. I heard that.**

Q. **Yes.**

A. **Yes.**

Q. **What I would like to do -- and I will be perfectly upfront with you. This may make it easier. I don't think --**

If I may, Your Honor.

Dr. Lee, I do not believe that today I will be asking you questions that have not been addressed previously. For the most part, I will be talking about things that you have already said. So I am not going to try to trick you. I just want to get the facts.

I would ask if Mr. Kim could tell him that so that he has some comfort with this.

(Interpreter consults with witness.)

THE WITNESS: Yes.

BY MR. PARTRIDGE:

Q. **Let's begin with the '121 patent and your filing of the '121 patent. I would like to approach and hand you the file history from the '121 patent. It's Defendants' Exhibit 537.**

MR. PARTRIDGE: May I, Your Honor?

THE COURT: You may.

BY MR. PARTRIDGE:

Q. **Now, if you would turn to page -- let me explain. Look at the bottom of the document. There are page numbers.**

A. **Yes.**

Q. **Turn to page 28963.**

A. **28963.**

Q. **Correct. And you will see at the top of that page, it says that it's a declaration and power of attorney for utility or design patent application. Do you see that?**

A. **Yes.**

Q. **And this is for your dispenser of ice maker in refrigerator, correct?**

A. **Yes.**

Q. **And if you turn to page -- unfortunately, I have two versions, one of which doesn't have the page numbers.**

If you would turn to page 966, you will see your signature on that page. Correct?

A. **Yes.**

Q. **You signed this document on April 16, 2004, correct?**

A. **Yes.**

Q. **And further down that page, you see the name Chang-Ho Seo, correct?**

A. **Yes.**

Q. **Now, Mr. Seo -- did I pronounce that correctly, by the way?**

A. **Yes, right, perfect.**

Q. **Thank you. Mr. Seo signed this document on April 12th, 2004, correct?**

A. **Yes.**

Q. **And Mr. Seo was your co-inventor, a joint inventor with you on this patent application, correct?**

A. **Yes, right.**

Q. **And when you signed this declaration, you were swearing to the Patent Office that you believed all of you, that group of people that you identified, were inventors jointly of this invention. Correct?**

A. **Yes.**

Q. **Now, with respect to -- actually, to make it easier, let's go back to the patent, Plaintiffs' Exhibit 1, to the front page of the patent where the inventors are listed.**

You can see on the first page of the patent, Mr. Seo is identified as one of the co-inventors. Correct?

A. **Yes.**

Q. **I am trying to think of the easiest way to do this, so I apologize. Maybe the thing to do, to put this in context, is to go to the claims that are asserted.**

You understand that the claims that are asserted in this case by LG are Claims 20, 21, and 36, correct?

A. **I don't know much about the information. I am not a patent professional, so I don't know exactly about that.**

Q. **I will represent to you that LG has asserted three claims in this case, Claims 20, 21, and 36. Do you understand that representation that I am making?**

A. **Yes, I understand what you are saying, what claim number you are saying.**

Q. **Yes. So what I would like to do is to turn to Claim 20, and let's highlight the claim. This claim describes a mechanical drive mechanism; am I correct? Do you see those words?**

A. **Yes, I can see.**

Q. **And the claim refers to Claim 10. Do you see that?**

A. **Yes, I can see.**

Q. **And let's go back to Claim 10 and see what that says.**

MR. PARTRIDGE: Can you put the two pieces together? Or is that too difficult?

BY MR. PARTRIDGE:

Q. **Magic.**

This is Claim 10, and it includes a water-dispensing assembly configured to move. Do you see that?

A. **Yes, I can see.**

Q. **And it also contains a container support configured to extended along a plane. Do you see that?**

A. **Yes. I can see.**

Q. **And in sort of plain English, a water dispenser configured to move (indicating). Correct?**

A. **Yes.**

Q. **A container support configured to extend along a plane, correct?**

A. **Yes.**

Q. **So that if I am correct, that the claims being asserted by LG are the ones that say that there must be a mechanical drive mechanism rather than a manual mechanism. Do you understand?**

A. **What does it mean, manual, mechanical?**

Q. **Let's go back to Claim 20. Claim 20 says that the operation of the water-dispensing assembly is mechanical. Correct? Mechanical drive mechanism?**

A. **Yes.**

Q. **And Claim 10 just says a moving water dispenser assembly, correct?**

A. **Yes.**

Q. **So the invention that you were discussing in answering Mr. Coyne's questions concerns the use of a mechanical drive mechanism, correct?**

A. **Yes, I heard that.**

Q. **Yes. And, in fact, when you were trying to explain when you came up with the idea of this invention, you talked**

about a CD player as an example of a mechanical drive mechanism, correct?

A. **Yes.**

Q. **This is hard for me, too, because I am used to doing things fast in English, so please forgive me for being so slow here.**

A. **I am okay.**

Q. **Okay. Now, you understand that Mr. Seo, who we just talked about, was the person who worked on the water dispenser, correct?**

A. **Yes.**

Q. **That was his assignment on the project, correct?**

A. **Yes.**

[redacted]

MR. PARTRIDGE: May I approach again, Your Honor?

THE COURT: You may, Mr. Partridge.

BY MR. PARTRIDGE:

Q. **Dr. Lee, this is a document that we were given during one of your depositions in this case. Do you recall that occurrence?**

A. **Yes.**

Q. **This was a document that was created by LG during your deposition to try to explain the dates of various documents that LG had produced in the case. Do you recall that?**

A. **Yes.**

Q. **Could we put this up on the screen, please? If you can enlarge it a bit, that would be great, so I can see the four documents that are identified, please.**

Now, at what is called tab 16 there are four documents listed. Do you see that?

A. **Yes, I can see.**

Q. **And, in fact, if you look in the witness notebook that Mr. Coyne gave you -- and I am not sure which tabs in the book.**

MR. PARTRIDGE: I apologize, Your Honor. I didn't know what tabs they would use until this morning.

BY MR. PARTRIDGE:

Q. **But, Dr. Lee, if you would look at tabs 2, 3, 4, and**

5, those are the four documents that are listed on the screen right now. Correct?

A. **Which tab?**

Q. **Look in your notebook.**

A. **The notebook?**

Q. **Yes.**

Mr. Kim, it may help if you just explain to the witness that I want to compare the four tabs, 2, 3, 4, and 5, to the list of documents on Defendants' Exhibit 742.

A. **You mean this tab 16 is the tab 2?**

Q. **Yes.**

A. **That is the tab 3 and it follows, 4, 5?**

Q. **Yes, that's correct.**

A. **Yes.**

Q. **Okay. So the exhibits under those tabs are Plaintiffs' Exhibits 32, 33, 34, and 35. And my question to you is: Am I correct that none of those documents was created any earlier than February 5th, 2003?**

(Pause.)

A. **Yes, it is all data later of February.**

Q. **Yes, February 5th. An easier way to say it is no earlier than February 5th of 2003; is that correct?**

MR. PARTRIDGE: Mr. Kim.

(Witness consults with interpreter.)

THE INTERPRETER: 2003 did you say?

MR. PARTRIDGE: Yes.

(Witness consults with interpreter.)

THE WITNESS: What you are asking, as to being later than February 5th, 2003?

BY MR. PARTRIDGE:

Q. **February 5th, 2003, or later.**

A. **(Through interpreter) In accordance with what is indicated here, these files are said to have been created on or about February 5th, 2003.**

Q. **Thank you.**

Am I correct, Dr. Lee, and I ask this based on the answers you gave to Mr. Coyne's questions -- are you with me so far?

A. **Yes.**

[redacted]

Q. **In fact, I think you indicated that the document we just referred to is Plaintiffs' Exhibit 348, which is tab 7 of your notebook. Is that correct?**

A. **(Through interpreter) Are you asking if this has something to do with this over here?**

Q. **I am trying to confirm with you that this exhibit, 348, is the earliest document you have found that has**

anything to do with the '121 invention.
A. (Through interpreter) Yes, that is correct.
Q. If I recall correctly, Dr. Lee, the project that led to the '121 invention was called the Bics project, B-i-c-s, correct?
A. Yes.
Q. And the Bics project started no earlier than October of 2002; is that correct?
A. It's not correct, because we started -- officially, we started it from October 2002. But before that we already had some ideas and made some teams and we did some activity, we had some activity people.
MR. PARTRIDGE: May I approach, Your Honor?
THE COURT: You may approach freely.
BY MR. PARTRIDGE:
Q. I have handed you a transcript from earlier testimony you have given. I ask you to turn to page 906 -- excuse me, 907. I gave you the wrong page.
A. Yes.
Q. You were asked the following question: "And you said that the Bics project started in October of 2002, correct?"
And the answer you gave was?
A. Yeah, I said officially it start October 2002. But we already made a team and some ideas to start the project, our activities of people that day.

Q. **Let me clarify my question, Dr. Lee.**

You were asked: "And you said that the Bics project started in October of 2002, correct?"

And your answer was "Yes."

Did I read that correctly?

A. **Yes, officially.**

Q. **Let's go back to the '121 patent. You can set that aside, Dr. Lee.**

Let's look at the '121 patent. If we could turn to Figure 8. Actually, let's go to Figure 7 first. This is what is called a cross-sectional view; is that correct?

A. **Yes.**

Q. **So it's as though we took the refrigerator and sliced it in half and looked at the side of it, correct?**

A. **Yes.**

Q. **And this particular slice of the refrigerator is in the vicinity of the water dispenser, correct?**

A. **Pardon me?**

Q. **This is the area of the water dispenser. The slice we have taken in Figure 7 is in the area of the water dispenser?**

A. **(Consults with interpreter) Yes, that is correct.**

Q. **And the mechanical drive mechanism shown in this figure is something called a rack and pinion, correct?**

A. **Yes. This is the one example of the implementation of**

that.

Q. And there would be many different ways to make a mechanical drive mechanism, correct?

A. Yes.

Q. And the one that you showed in the drawing is a rack and pinion, correct?

A. Yes.

Q. And we have highlighted it in yellow. In the wheel portion, I think that is called the pinion. Correct?

A. It doesn't say in here --

Q. As an engineer.

A. Yes.

Q. I apologize.

A. As an engineer, it says it has the pinion.

Q. What happens with this particular mechanical drive mechanism is you turn the wheel and the element moves outwardly as shown in the next figure. Is that correct? And we will show you the next figure.

A. Yes, that is correct. That's the one example I said.

Q. And rack and pinions have been around for many, many, many years, correct?

A. Yes.

Q. And in this figure there is a water pipe shown that on the licensed figure, which is Figure 7, is element 326. And we are going to color that in blue. Correct?

A. **Yes.**

Q. **And in the next figure, Figure 8, we have covered the water pipe in blue as well, and that is not labeled in Figure 8, but you can see it there.**

A. **Figure 8?**

Q. **Look at the blue part of Figure 8, which is the one on the right. That is the water pipe.**

A. **Yes.**

Q. **This water pipe portion is the water dispenser that your patent claims talk about, correct?**

A. **Yes.**

Q. **And this is the part that Mr. Seo developed for LG, correct?**

A. **Yes. He suggested this idea to pull out the water pipe with the retractable dispenser.**

Q. **Claim 20 of this patent -- and we won't go to it. We won't take the time -- says that the mechanical drive mechanism is a spring. You recall that?**

A. **Yes.**

Q. **So one alternative to the rack and pinion would be the use of a spring, correct?**

A. **I said this is one of the examples. We made a lot of things to make the realization of this system. We can use just the coil spring or the -- we call it the prep plate spring or the other kind of -- the tape spring. Do you**

understand?

Q. Yes, I do.

A. You can implement this idea to through many ways. This is one of the examples of that idea. And we can make it the other way. For either one, you made this idea with a spring, also.

Q. That is exactly my point. At the time there were many different ways for moving a simple mechanical element, a rack and pinion, a spring. All the things that you just described were all available for you to consider in coming up with your mechanical drive, correct?

MR. PARTRIDGE: You may have to translate that.

THE WITNESS: (Through interpreter) Be that as it may, in terms of our actually going about implementing this, in our opinion, the simplest yet most effective way, indeed the best way for us to realize this was in our thinking to go with the spring mechanism.

BY MR. PARTRIDGE:

Q. Thank you, Dr. Lee.

As a matter of fact, when you disclosed the spring in this patent application, the use of springs were so well-known that you did not find it necessary to even show the spring in the drawings. Is that correct?

(Interpreter consults with witness.)

BY MR. PARTRIDGE:

Q. **Let me help you with that so we don't double up. This might make it easier.**

If you turn to the '121 patent, line 63, column 5, that paragraph, let's look at the first sentence. It reads, "The dispenser also includes a spring or an oil pressure means (not illustrated)."

Did I read that correctly?

A. **Yes.**

Q. **So in your view at the time, when this patent application was written, it was not even necessary to show the spring in the drawings because springs had been used to move things for a long time. Correct?**

A. **The spring is very simple. We used it for a long time. But when you use it for the ice dispenser, this is the -- no one made this, that kind of ice dispenser.**

So it is very difficult to put into the spring and the other mechanism to the ice dispenser.

So this deserve -- I made the spring type of the mechanism. It is so difficult to make it. But the spring is used in a lot of -- in a lot of mechanisms, a lot of things, many, many applications. You have already -- you use used for a long time, but it is not easy to make it with that spring.

Q. **I understand. In the specification you felt that it wasn't even necessary to illustrate the spring, correct?**

A. **Yes.**

Q. **And, Dr. Lee, your answer suggests to me that it's your view that the design and development of refrigerators is not as simple as a lot of people might think. Am I correct?**

A. **Yes.**

MR. PARTRIDGE: I have no further questions.

THE COURT: Thank you, Mr. Partridge. Any redirect, Mr. Coyne?

MR. COYNE: Just one question, Your Honor.

REDIRECT EXAMINATION

BY MR. COYNE:

Q. **Dr. Lee, Mr. Partridge pointed you to this refrigerator, DPX 026. I know you probably are obstructed by the wood on the Bench to see the other one, but can you see PTX 552?**

A. **Yes, I can see.**

Q. **Does that have a pull-out tray?**

A. **Yes.**

Q. **Does that have a spigot that extends?**

A. **Yes, I can see.**

Q. **Did it extend with a mechanical drive mechanism?**

A. **Yes, it's mechanical driving there.**

MR. COYNE: No further questions, Your Honor.

THE COURT: Thank you, Dr. Lee. You are

excused.

(Witness excused.)

THE INTERPRETER: Your Honor, are there any other witnesses?

THE COURT: Mr. Coyne, may we excuse Mr. Kim?

MR. COYNE: Yes, for right now we may.

THE INTERPRETER: Your Honor, I believe Mr. Coyne was referring to 552 and he said 522.

MR. SHARMA: Good morning. My name is Anand Sharma. Your Honor, as our next witness, LG would like to call Dr. Warren Bessler. We also have some witness binders for Dr. Bessler as well.

Your Honor, we also have a photo witness sheet, as we did for the other piece.

THE COURT: Provide that to Ms. Walker, if you would.

... Warren Frank Bessler, having been duly sworn as a witness, was examined and testified as follows ...

DIRECT EXAMINATION

BY MR. SHARMA:

Q. **Good morning.**

A. **Good morning.**

Q. **Could you please tell the jury about your education after high school, please?**

A. **Yes. After high school, I attended Rensselaer**

Polytechnic Institute in Troy, New York. And I got my Bachelor's, Master's, and Ph.D. in mechanical engineering at RPI. When I graduated, I was top in my class.

Q. **Did you focus your studies in any particular aspect of mechanical engineering?**

A. **Yes. My concentration was in heat transfer and refrigeration.**

Q. **And where did you go after you received your Ph.D.?**

A. **After that I went to work at the General Electric R&D center, which is located in Niskayuna, New York.**

Q. **How long did you work at GE?**

A. **I worked there about 23 years, before I retired in, I think it was, 2002.**

Q. **What types of things did you do at GE?**

A. **I had several jobs there, but eventually I evolved into the refrigeration lab. And from 1985 to I think it was around '96 or so, I was the lead engineer there in refrigeration engineering. And then after that, from '97 to about 2002, I was in charge of the lab there.**

Q. **And what type of work did you do in GE's lab?**

A. **The lab is involved in primarily household refrigerators. Our job there is to try to come up with new technologies and new designs for refrigerators.**

In addition to that, we helped the company's manufacturing division with help troubleshooting, assisting

models that are having problems and come up with ways to improve their performance.

Also, we were involved with quite a bit of what we called competitive benchmarking.

Q. **What is benchmarking?**

A. **Competitive benchmarking is if a company is trying to come up with a new idea or new technology, they generally try to get ahold of the competitors' models. In this case we would look to see who had the best refrigerators out there in a certain feature. Then we would get ahold of those refrigerators in the lab and we would put them through a series of performance tests. We take them apart; see how they worked.**

And also we look at the patents that were held on those refrigerators, before we would come up with our new ideas. Then hopefully our ideas would be better than the competition. And we would have something to compare them to. That was like the benchmark. That way, our patents would come up to be with different ideas than what was already out there.

Q. **Did the refrigeration lab at GE interact with any other departments within GE?**

A. **Yes. We interacted with the sales and marketing with divisions. We interacted with our appliance part, which is in Louisville, Kentucky. That is where they make a lot of**

appliances. We also interacted with our factories.

Q. **Did your lab at GE produce any products that were eventually sold to consumers?**

A. **We came up with ideas and put them into prototype form. And they eventually became products that you can buy now.**

For example, the GE Arctica refrigerators were developed at the lab. They are the first GE refrigerators that have fully electronic control. And they came out and were very well received by the magazines.

Q. **Dr. Bessler, do you have any professional licenses related to your work in refrigeration?**

A. **Yes. I am a licensed professional engineer. I also have my universal license in refrigerants from the EPA.**

Q. **Dr. Bessler, have you been named as an inventor on any patents?**

A. **Yes. I am listed as an inventor on 33 U.S. patents.**

Q. **What type of technology do those patents involve?**

A. **There are several different types. I would say the majority of them are in refrigeration.**

Q. **So you retired in 2002 from GE. What do you do today?**

A. **Today I do several things. I am an independent engineering consultant in the areas of refrigeration and heat transfer.**

I also teach at the local graduate school. I

teach the courses in heat transfer and energy engineering. In the summertime I teach people how to ride motorcycles. I am a licensed motorcycle safety coach. And I take care of -- my wife and I take care of my elderly parents at home, which takes a lot of time.

Then I also have a hobby of making beers. I am a home brewer. That is what I do for relaxation.

Q. **Dr. Bessler, have you ever testified as an expert before a jury?**

A. **No, I have not.**

Q. **Have you ever testified as an expert?**

A. **Yes. I testified once before as an expert.**

Q. **What type of case was that?**

A. **It was a patent case that had to do with refrigerators.**

MR. SHARMA: Your Honor, at this time we would like to offer Dr. Bessler as an expert in refrigerators and refrigeration technology.

THE COURT: Any objection?

MR. MORICO: No objection.

THE COURT: The Court will accept Dr. Bessler.

BY MR. SHARMA:

Q. **Dr. Bessler, in front of you, you have a somewhat thick binder. There is a tab 1 in that binder. It is labeled "PTX 001."**

A. **I got it.**
Q. **Have you seen this before?**
A. **Yes, I have. This is the '121 patent.**
Q. **Are you familiar with the '121 patent?**
A. **Yes, I am. I have read it several times.**
Q. **And when you say "several times," how much time have you spent considering the '121 patent?**
A. **I have probably spent quite a few weeks looking this one patent over.**
Q. **Dr. Bessler, based on your experience, how are patents used in the refrigerator industry?**
A. **At GE, where I worked, patents were used for a few reasons. One, it gives the company a chance to show the rest of the world they are a technology leader in a certain area. For an engineer like myself, it's very important to get patents, because it demonstrates to the company that I have some useful value and that I can be trusted to be an innovator, and it certainly helps my career and my salary along if I am successful in getting patents.**

And also, I think there is a legal aspect to it, that it gives GE the chance to protect itself against other competitors who might be trying to steal their ideas.
Q. **Dr. Bessler, who owns the '121 patent?**
A. **That's owned by LG.**
Q. **What is the '121 patent about?**

A. **In general terms, I think the '121 patent is about an ice and water dispenser that is movable, has a movable tray, and it has a movable spigot so that you can extend those from the front of the refrigerator and fill large containers. And it also has to do with mechanical drive, which makes that movement automatic for the spigot.**

Q. **Dr. Bessler, for purposes of this trial, have you focused on any particular claims of the '121 patent?**

A. **Yes. Claims 20, 21, and 36.**

Q. **Do you know which Whirlpool refrigerators LG is accusing of infringing those claims?**

A. **Well, LG is accusing the Whirlpool refrigerators, and also accusing some Kenmore refrigerators, which is the Sears brand that Whirlpool makes for Sears.**

Q. **Dr. Bessler, do you have any opinions as to whether any of those Whirlpool-made refrigerators infringe the asserted claims of the '121 patent?**

A. **Yes. My opinion is that there are certain Whirlpool and Kenmore refrigerators that do infringe those claims.**

Q. **Dr. Bessler, can you please tell us how you performed your infringement analysis?**

A. **Sure. The idea is that we have a refrigerator with certain features. And then we have a patent with certain claims. So I need to understand what those claims -- what the language means. Then I need to look at the refrigerator**

and see if it has the same features that are in those claims. And if they do, then they are infringing.

Q. **Did the Judge help you at all in understanding any of those claims and what they mean?**

A. **Yes. The claims have a bunch of words, obviously. But part of understanding a patent is to really understand what those words mean. For that, Judge Sleet provides us with a document that gives his ruling on what the constructions of those claims really mean.**

Q. **Dr. Bessler, when you did your infringement analysis, what mindset did you use?**

A. **When I looked at whether the refrigerators are infringing, I use what they call a mindset of one of ordinary skill in the art.**

Q. **Now, what is one of ordinary skill in the art in the context of the '121 patent?**

A. **When I say "ordinary skill in the art," I am trying to put my head in the -- of one who would be a regular refrigeration engineer. And for that, I consider somebody who would have a Bachelor's degree in mechanical engineering. And let's say also two years of experience in the design of refrigerators.**

There is plenty of engineers that don't have a four-year degree. So if there was an engineer that didn't have a full four-year degree, I would expect him to have

more experience in the design and manufacture of refrigerators, let's say five years.

Q. Dr. Bessler, how did you arrive at that definition?

A. In my course of working at General Electric, I had the opportunity to work with a lot of engineers from GE and other places that were involved in making and designing refrigerators. And on a daily basis I interacted with them. That gave me a feeling of what a typical ordinary skill engineer would be like.

Q. Dr. Bessler, returning to the infringement analysis that you performed, did you perform an analysis for each asserted claim in the LG patent?

A. Yes, I did.

Q. Let's start with Claim 20. Can you please explain your infringement analysis for Claim 20?

A. Well, Claim 20 is what they call a dependent claim. So it actually depends on another claim, 10, which is an independent claim. So in order to do that I looked first at the language of Claim 10 and then the language of Claim 20. And in order to do that, I needed a Whirlpool or Kenmore refrigerator to look at to compare it to. And in that case, I used the Kenmore refrigerator, the stainless steel one there, PTX-0552.

Q. Could you please walk us through your infringement analysis using the Kenmore refrigerator that you identified

as PTX-552?

THE WITNESS: Your Honor, if it's okay, if I can go over and stand there.

THE COURT: Sure. Just keep your voice up, please, Doctor.

THE WITNESS: I am going to want to take over the claim language. I had some charts made up.

BY MR. SHARMA:

Q. I think you are referring to PDX-11. Dr. Bessler, is that it on the screen, PDX-11?

A. Yes.

Q. I think you have some sheets in your binder as well?

A. Yes. This way I can just carry those over there and I won't have to go back and forth.

THE COURT: We will put a mike on you, Doctor, since it sounds like you are going to be over there a while.

THE WITNESS: Let me just get all these out of here.

(Witness steps down from stand.)

BY MR. SHARMA:

Q. Dr. Bessler, before you get started, when you get to that PTX-552, can you just tell us what model number that is?

A. This was the bar code taped on the back of the refrigerator. It says it's Model 465870380.

Q. **Thank you. If you could please proceed with describing your infringement analysis.**

A. **Sure. The idea is that we have a refrigerator here, which is a Kenmore refrigerator made by Whirlpool. And we have some claim language in the '121 patent. My job as the witness is to try to decide if the claim language matches the features on this Kenmore refrigerator.**

So in order to do that, can I just point out these features? Or do we have a camera?

MR. SHARMA: Mr. Dunn, does that camera work?

THE WITNESS: My thought was if there was a camera, it would expand the shot of the dispenser.

THE COURT: I think there is a camera.

THE WITNESS: I think that's going to be all right.

As I mentioned, Claim 10 is an independent claim. So the first element of that claim is a dispenser for an appliance comprising a water-dispensing assembly configured to move.

So we have an appliance, obviously, a refrigerator. And we have a water-dispensing assembly, which is here (indicating). As you can see, it's configured to move. When I release it, it moves out to the front of the refrigerator.

If we can go back to Claim 10, what I can do is,

I can put -- let's see -- right there I can put a checkmark that the Whirlpool refrigerator has that feature, which is covered by the patent claim.

Now, if I look at the next one, it says, "an outlet of the water dispensing assembly is positioned outside an outer surface of a door of an appliance in at least one position of water dispensing assembly movement."

So if we can go back to this refrigerator, you can see that when I release this right here, there is a water outlet where my finger is. And this is the door. So in one position, that outlet is positioned in front of the door.

So if we go back to the claim chart, if we can put a checkmark here.

THE COURT: Ladies and gentlemen, can you see where the Doctor is pointing to?

One of you can't. Is that a blue nozzle or something?

THE WITNESS: Yes. It is a blue nozzle right here. There you go. That is where the water comes out. It was hooked up to the waterline.

So with that in mind, if we can go to the next element of the claim, which is "a container support configured to extend along a plane perpendicular to the door such that the container support is configured for movement

between a withdrawn and an extended position."

So if you look over here, this is the container support. This support here moves out to an extended position. Everybody can see that. And it moves back into a retracted position. So if we go back to the claim language again, we can put a checkmark here for a container support that moves.

Now, it says that "the container support is configured in the extended position to support a container being filled by water by water dispensing when the outlet of the water dispensing assembly is positioned outside an outer surface of the door."

If we can go back to this, as you can see here, if we take out our tray, we have this in the extended position. And we can take a large container, like a coffee pot or something, underneath here, and because this is moved out from the refrigerator and so is this, you can place your large container on this support and fill it.

So back to Claim 10, we can put a checkmark here.

Now we are ready for Claim 20, which depends upon Claim 10. Claim 20 says it's a dispenser of Claim 10 "further comprising a mechanical drive mechanism configured to move the water dispensing assembly."

So back to the refrigerator. This here is the

mechanical drive mechanism. And when I release it, it moves the water dispensing assembly. So I go back to Claim 20 and I can put a checkmark here.

As I mentioned, there were two other claims. The next claim after 20 was 21.

BY MR. SHARMA:

Q. **Dr. Bessler, go to 21, please.**

THE COURT: Perhaps it's time to interpose a question.

BY MR. SHARMA:

Q. **I was going to ask you: You talked about that water-dispensing assembly. How does it move?**

A. **Okay. This dispensing assembly right here, when I release it, you see it move like that. That's because inside of this assembly there is a spring that's wound up. When I close this, the spring is wound up. When I release the catch, the spring unwinds and it presents the spigot.**

Q. **How do you know that?**

A. **Well, I know that because I took one of these apart and saw how it worked.**

Q. **What type of spring is it? How would you describe the spring?**

A. **I would describe it as a torsional spring. It's kind of a coil spring. You wind it up and it releases itself.**

Q. **I think you were going to Claim 21.**

A. **Yes.**

Q. **How does Claim 21 of the '121 patent compare to PTX-0552?**

A. **I believe that it has the same language that the refrigerator has as a component here. If I look at Claim 20, it's dependent on Claim 21 -- if I look at 21, it's dependent on Claim 20. And it states that it is a "dispenser of Claim 20 wherein the mechanical drive mechanism includes a spring."**

As I just said, this is the mechanical drive mechanism. The thing that actually moves that is the spring inside it.

So I would say that based on my observations, I would put a checkmark here. But before I do that, I have to go back and remind everybody that we just went through and looked at 10, so we can check off the elements of 10, and then that was from the previous exercise, Claim 20, which depends on 10, and then Claim 21, we can check off with that, since it depends on Claim 20.

So far, in comparing the claim language to the refrigerator, I found that the refrigerator has all of the features of that claim language.

Q. **Dr. Bessler, what about Claim 36?**

A. **All right. That is on another chart I had made, which I think is tab 13. Yes, there it is.**

Claim 36 is an independent claim. So what I want to do now is compare the language of this to the refrigerator. It says, "a dispenser for an appliance comprising a movable member." So if we go back to the refrigerator, appliance, dispenser, and here is our movable member (indicating). If I go to the chart, we can check off those two.

Then it says "is a water supply mechanism attached to a movable member."

Inside of here is a water tube that comes down to the center of this dispense assembly. That would be satisfying that element of the claim.

THE COURT: Doctor, it is probably going to help for the record when you say "here," if you can describe what you are describing.

THE WITNESS: Fine. Behind this dispense mechanism, a water tube comes down and hooks up to the top of it, inside the refrigerator. That would be the element of that claim. You can't see it. It's inside the dispenser.

BY MR. SHARMA:

Q. **How does the blue spigot that you were talking about before relate to that water tube?**

A. **The water tube comes to this dispense assembly and then it supplies that spigot through this piece right here.**

So if we go back to the chart, we can put a checkmark in there for that.

Q. **How about this last element?**

A. **The final element, it says, "a mechanical drive mechanism configured to, upon activation of a user control, apply force other than supplied by a user to motivate movement of the movable member from a first position at which an outlet of the supply mechanism is positioned behind a plane representing an outer surface of a door, to a second position, which the outlet mechanism is positioned in front of the claim, representing the outer surface of the door."**

Q. **Dr. Bessler, can you explain what is meant by "apply a force other than supplied by a user to motivate movement" -- "movable member"?**

A. **Yes. If we can go back to the refrigerator again, what that claim language means to me is that when I release this catch, the spring supplies the force, other than the force of my releasing the catch. That's what actually moves the rotating spigot.**

Q. **I am sorry, I interrupted you. Could you compare that last element of the claim to the Kenmore refrigerator?**

A. **Yes. I believe if we go back to that element, the Kenmore refrigerator here has that kind of a mechanism that supplies a force other than this force supplied by me, the user, that forces the spring force. So I will put a check**

here.

Based on that analysis, since the refrigerator has all the features that matches the claim language, I would say that the refrigerator is infringing the '121 patent.

Q. **Thank you, Dr. Bessler. If you would like to head back to the chair, I don't think I have any more questions on the refrigerator in front of you.**

(Witness resumes stand.)

BY MR. SHARMA:

Q. **Now, Dr. Bessler, did you look at all the accused Whirlpool models or just the refrigerator that is here in the courtroom today?**

A. **I looked at a few Kenmore models. I didn't look at all of them, because there was a list provided to me, which I believe LG and Whirlpool both agreed to, which contains all of the model numbers of the refrigerators that had the automatic spigot and movable tray.**

So it was my understanding, as long as I found one model on that list that infringed, that all the models on that list had the same features.

Q. **Dr. Bessler, can you turn to tab 3 of your binder? That is PTX-771. If we could pull that up on the screen, please.**

What is PTX-771?

A. **PTX-771 is that list of refrigerators I was talking about. It has a few different, separate categories in it. I think it's the second page that has a category that says spring rotates -- "spigot rotates with spring mechanism." That would be the page I was talking about.**

Q. **So, Dr. Bessler, your opinions that you have given on the infringement of claims 20, 21, and 36, what models do they apply to?**

A. **It would be my opinion that they apply to all the models on this page. And the one I looked at over there, that model number is on this list somewhere.**

Q. **When you say "this page," can you identify by page number or category heading?**

A. **Sure. It's the category heading "Spigot Rotates With Spring Mechanism." And it's page 2 of the document that says "Whirlpool Models Incorporating and Extending Ice Trays and Rotatable Spigot."**

MR. SHARMA: Thank you, Doctor. I have no additional questions.

THE COURT: Mr. Morico, you may cross-examine.

MR. MORICO: Thank you, Your Honor.

CROSS-EXAMINATION

BY MR. MORICO:

Q. **Good morning. I am Paul Morico with Baker Botts.**

Good morning, Dr. Bessler. Nice to see you

again.
A. Good morning.
Q. I have a few questions of you. I hope to be brief.
First off, Dr. Bessler, you are being paid for your testimony today, correct?
A. Yes, I am.
Q. And how much are you being paid for your testimony today, Dr. Bessler?
A. My rate is $150 an hour.
Q. Prior to your engagement in this case, you have previously done some consulting work for LG, correct?
A. Yes. When I was an independent engineering consultant, like I am now, I did some work for them.
Q. And were you paid the same rate for that consulting work as you are being paid today?
A. No, I was not.
Q. Was it a lesser amount?
A. Yes, it was.
Q. Now, Dr. Bessler, you left GE, if I understand correctly, in 2002. Correct?
A. Yes, that's true.
Q. If I understand your testimony earlier, you said you retired in that year from GE?
A. Yes.
Q. And at that point in time, you were about 49 or 50

years old; is that correct?

A. **I was about 50 years old, yes.**

Q. **Fairly early retirement, then?**

A. **Well, I worked there a long time. I achieved some goals that I really wanted to there involving refrigerators, which was pretty much my main area of endeavor as an engineer.**

When I reached those goals, I had some other opportunities in front of me, and I wanted to explore those. And I really enjoyed teaching. I had an opportunity to take a university teaching position. And also I really enjoy motorcycles. And I want to become an instructor. So I had a little change of career.

Q. **Dr. Bessler, the reason you left was because GE closed your refrigeration lab and sent it overseas, correct?**

A. **That's not the reason I left, although what you said did indeed happen.**

I had a position there, as I said, where I was in charge of it. And I felt that I had done a very good body of work there. And even though I could stay on and do other things, I felt like the best use of my time would be to move on and become a consultant.

Q. **Since 2002 to the present, the primary work you have done in the refrigeration area has been for LG, correct?**

A. **From 2002 to present?**

Q. **Correct.**

A. **I have worked with other companies as well in refrigeration, in the refrigeration arena. As far as refrigerators go, I would say most of my work was with LG.**

Q. **And since leaving GE, you have not worked on any ice- and water-dispensing systems; is that correct?**

A. **If you discount the activities involved with this case?**

Q. **Correct.**

A. **Other than that, no.**

Q. **Now, Mr. Bessler, you have reviewed Mr. Voglewede's deposition testimony in connection with your analysis here in this case, correct?**

A. **Yes.**

Q. **And you understand that Mr. Voglewede is the person at Whirlpool who developed the ice and water dispensers that you are accusing of infringement, correct?**

A. **I am familiar with his name. And I have read his testimony. I am not sure if he is the only inventor on those patents or those ideas that I have seen from Whirlpool.**

Q. **Now, you would agree with me, Dr. Bessler, that in the last eight years Mr. Voglewede has spent more time working on developing ice- and water-dispensing systems than you have, correct?**

MR. SHARMA: Your Honor, I would like to interpose an objection. I believe we are outside the scope of Dr. Bessler's testimony. I think we might be moving toward validity.

THE COURT: I disagree.

MR. MORICO: This goes to his qualifications, Your Honor.

THE COURT: It is overruled.

THE WITNESS: I am sorry. Could you repeat that again?

BY MR. MORICO:

Q. **Yes. My question is, Dr. Bessler: In the last eight years, since leaving GE, you have spent less time than Mr. Voglewede weed, the developer of the accused ice and water system, in connection with developing ice- and water-dispensing systems, correct, in the last eight years?**

A. **Since I left GE.**

Q. **That's my question. You would agree with that, correct?**

A. **I am not sure how many hours or what work -- Dr. Voglewede or Mr. Voglewede --**

Q. **Mr. Voglewede.**

A. **-- Mr. Voglewede has spent, so I really don't know if I could answer that question for you. I mean, if he has been doing a lot of work in that area, then he has been**

doing more than I have.

Q. **Now, turning to your U.S. patents, you said you had 33 issued U.S. patents. Something along that order. Does that sound about right?**

A. **That sounds about right, yes.**

Q. **And none of those issued patents are for ice- and water-dispensing systems, are they?**

A. **No. I am not listed as an inventor on any of those, of my patents for that topic. Although while I was at the lab there, we did develop work on new ice and water systems.**

Q. **That wasn't my question. My question is: The patents that you have received, none of them relate specifically to ice- and water-dispensing systems, correct?**

A. **They don't relate directly to ice and water systems.**

Q. **That was my question. You would agree with that, correct?**

A. **Yes.**

Q. **And, in fact, the three articles you listed in the resume that you provided to us in this case, none of those relate to ice- and water-dispensing systems or refrigerating, refrigeration systems for commercial or residential refrigerators, do they?**

A. **Could you say those categories again?**

Q. **Yes. Let me help you, actually.**

MR. MORICO: Your Honor, if I may approach the

witness?

THE COURT: Yes.

BY MR. MORICO:

Q. Dr. Bessler, I have handed you your expert report. If you could turn to tab A.

A. Is that right in the front?

Q. I am sorry. It's actually tab B. It's in the back.

A. Okay. The problem is, I don't see any tab numbers on here per se.

Q. It's Exhibit B to your report in the back.

A. Okay.

Sorry, Your Honor, I'm going to have to --

Q. It's B.

A. I am finding my way there.

Okay. I am there.

Q. Do you see under "Articles" on the second page of your resume, do you see that?

A. Yes, I do.

Q. One of those is for solar-assisted heat pumps for residential use?

A. That's right.

Q. Another one is for electrically driven automotive air conditioners?

A. Yes.

Q. And the third one is for progress on free piston

sterling coolers, correct?

A. **That's right.**

Q. **And none of those relate to ice- and water-dispensing systems, correct?**

A. **That's correct. There is a reason why I don't have many publications in the area of refrigerators. It's not because we didn't have a lot of good ideas.**

Q. **Mr. Bessler, I didn't ask you that question.**

THE COURT: Dr. Bessler, what you need to try to do is answer his question and you will have an opportunity to explain further, because I am sure your lawyer is going to ask you some questions.

THE WITNESS: Okay. Sorry.

MR. MORICO: Jason, if you could put up the claim chart that Dr. Bessler stepped through. It's the demonstrative exhibits of plaintiffs'.

Now, with respect to Claim 10, which is the claim that you just stepped through for the jury, that claim is not being asserted in this case, correct?

A. **I am not an attorney. But my understanding is that when you look at a claim that's asserted claim, if it is a dependent claim, then you have to consider the claim it depends on. So that would be Claim 10.**

THE COURT: You are about to move into a different area, into the claims?

MR. MORICO: Yes.

THE COURT: We are going to take our morning break.

(Jury leaves courtroom at 11:00 a.m.)

(Recess taken.)

THE COURT: Ms. Walker, would you bring the jury in, please ?

(Jury enters courtroom at 11:18 a.m.)

BY MR. MORICO:

Q. **Dr. Bessler, before the break, we had the claim language up on the screen here. I had asked you about Claim 10. Let me rephrase my question.**

Claim 10 standing alone by itself is not being asserted in this case, correct?

A. **That's correct.**

Q. **And all of the asserted claims, 20, 21, and 36, all require that the outlet of the water-dispensing assembly must extend outside the outer surface of the of door, correct?**

A. **I don't think that 20 says that it specifically has to extend outside of the door. I think that's in Claim 10, the wording.**

Q. **But 20, as I understand you testified earlier, is dependent on Claim 10?**

A. **Right.**

Q. **And, therefore, as a matter of law, incorporates all of the elements of Claim 10, correct?**

A. **That's my understanding of how that works.**

Q. **So you can't infringe Claim 20 unless it has all of the elements of Claim 10, including that the outlet must project or extend outside the outer surface of the door. Correct?**

A. **In order to infringe 20, you are saying the elements of Claim 10 also have to be met.**

Q. **Correct. Isn't that what you just stepped us through?**

A. **Yes.**

Q. **And one of those elements of Claim 10 is that the outlet must extended beyond the outer surface of the door, correct?**

A. **That's what that language requires.**

Q. **Right. And Claim 36 -- excuse me, Claim 21 is dependent upon Claim 20?**

A. **Right.**

Q. **And, therefore, also has that requirement, correct?**

A. **That's correct.**

Q. **And Claim 36 makes it even more explicit, because it talks about the outlet of the water-dispensing assembly extending from the inside of the surface of the door to the outside of the surface of the door. Correct?**

A. **I believe that's right. If you could just put 36 up**

there, where you are saying the door -- yes, outer surface, yes.

Q. So all of the claims require that the outlet of the water-dispensing assembly must project or extend outside the outer surface of the door, correct?

A. That's what that language states.

Q. And all of the claims require, 20, 21, and 36, some sort of mechanical drive mechanism, correct?

A. 20, 21, and 36, mechanical drive mechanism, yes.

Q. So you can't infringe any of the claims, 20, 21, and 36, unless the outlet of the water-dispensing assembly projects outside the outer surface of the door, correct?

A. I am not -- well, let me answer it this way: Without being an attorney, there is a few different kinds of infringement. There is what I understand as an engineer direct infringement, where like you just follow the language and --

Q. Correct. But, Dr. Bessler, you just testified about infringement of all these claims. You said you read the patent, you read the file history, you read the claims, you read the patent many times. You understand what the claims say and what they mean. I am asking you a very simple question; that is, whether all of the claims require -- in fact, they all require, 20, 21, and 36, all require that the outlet of the water-dispensing assembly must project outside

the outer surface of the door. Very simple question. That is a correct statement, isn't it?

A. **Yes, that is a correct statement. I thought you were asking me something about infringement.**

Q. **We now have established that.**

With respect to the mechanical drive mechanism, 20, 21, and 36 all require a mechanical drive mechanism of some sort. Therefore, to infringe any of those three claims, you must have a mechanical drive mechanism, correct?

A. **In order to infringe those claims, you must have a mechanical drive mechanism, yes.**

Q. **All right, very good. Thank you. Let's move on to the list, the model list that you showed us.**

If you could put that up on the board, please, Jason.

Now, this is the list that was produced. And you testified that the products fall into three separate categories. And one of them is a side-by-side platform with a rotatable spigot and the spigot rotates manually. Do you see that?

A. **I see that.**

Q. **And then the next category is where the spigot -- also a side-by-side platform, where the spigot rotates with the spring mechanism, correct?**

A. **Yes. I believe that's the sheet I was referring to.**

Q. **And that is the one you have given an opinion on today, correct?**

A. **Yes.**

Q. **And then the third category is French-door, bottom-mount platforms rotatable spigot where the spigot rotates manually, correct?**

A. **Correct.**

Q. **Now, with respect to that last category, you have no opinions whether Claims 20, 21, and 36 infringe -- or are infringed by any of those products, correct?**

A. **I didn't look at that particular product.**

Q. **Right. Therefore, you have no opinions on infringement with respect to those three claims, with respect to those products' configuration, correct?**

A. **For the French-door, bottom?**

Q. **Correct.**

A. **No. I looked at the ones on the other list.**

Q. **So we can cross those off the list, agreed, because you have no opinions on those?**

A. **I could give an opinion if I had a chance to look at them.**

Q. **But you have not given an opinion as required at the time with respect to this set of units, correct? You have no opinion with respect to those, correct?**

A. **Well, I looked -- when I looked at this infringement,**

I was looking for refrigerators that had a mechanical drive. I didn't look at refrigerators that didn't have a mechanical drive.

Q. **So these don't have a mechanical drive, so they would not meet the claim limitation that there be a mechanical drive mechanism, correct?**

A. **That's why I didn't look at them.**

Q. **Let's go on to the next list, the side-by-side list, where the spigot rotates manually. Again, they rotate manually and, therefore, don't have a mechanical drive mechanism. So you have no opinions as to whether those infringe, correct?**

A. **Based on the claims that were being asserted for this trial, they required a mechanical drive mechanism. So I didn't look at refrigerators without a mechanical drive mechanism.**

Q. **Right. In fact, they couldn't infringe because they don't have a mechanical drive mechanism, correct?**

A. **Well, they could still infringe the patent. But not the claims that we are talking about here.**

Q. **Asserted, very good. Thank you for that clarification.**

We can put an X through that one as well in terms of Claims 20, 21, and 36 in terms of there being no infringement with respect to those claims.

Let's now turn to the products that you did do an investigation on.

I believe, Dr. Bessler, you testified that that unit over there, PTX- -- I believe it's 0652, it's a little hard to see, is one of the units that you inspected and you opined on that infringed, correct?

A. **The stainless --**

THE COURT: Is that the stainless steel?

MR. MORICO: Yes.

THE COURT: PTX-0552.

BY MR. MORICO:

Q. **Thank you. 0552.**

You have opined that unit infringes, correct?

A. **Yes.**

Q. **In connection with your analysis in this case, you also inspected a manual unit. In particular, a model identified in your report as GC5NHAXS. Do you recall inspecting that unit in connection with your infringement analysis in the report that you provided us?**

A. **I inspected a lot of refrigerators, as you can imagine. I can't possibly recall that exact number. But if you say that's in my report, I am willing to believe that.**

Q. **And that refrigerator, if I may walk over there briefly, it's this refrigerator here, Dr. Bessler, and it has a pull-out tray. Do you see that?**

A. **Yes, I do.**
Q. **And it has a rotatable spigot. Do you see that?**
A. **Yes, I do.**
Q. **It is a manually operated rotatable spigot. There is no spring in this. Do you recall investigating a unit of this type?**
A. **I do see it, and I have seen units like that, yes.**
Q. **And this unit has two positions. It can be rotated where the water outlet is in what the unit actually says its center faucet. Do you recall inspecting that feature?**
A. **If I recall this -- like I said, I have seen a lot of refrigerators, but I remember there is a refrigerator with like two positions, halfway out maybe and all the way.**
Q. **And in the halfway position, the outlet of the water-dispensing mechanism is not outside the outer surface of the door, correct?**
A. **Well, I probably have to come down there and take a look. I really can't see.**

THE COURT: Okay. Why don't you take a look.

(Witness steps down from stand.)

BY MR. MORICO:
Q. **Do you recall inspecting this?**
A. **Maybe not this exact unit, but something similar to this, yes.**
Q. **You can see that the rotating spigot has two**

positions, one which actually right here says -- it probably may not be visible. It says "center faucet position." Do you see that?

A. All right.

Q. Do you see in this position it says "center faucet position"?

A. Yes, I do.

Q. And do you see in this position where it says "extended faucet position"? Do you see that, Dr. Bessler?

A. Yes, I see the words.

Q. And you would agree with me in the extended faucet position, the outlet is outside the outer surface of the door?

A. The outlet is outside the outer surface of the door, yes.

Q. And you would agree with me that in the center faucet position, it is not, correct?

A. Well, I am going to have a little trouble agreeing with you right away, because there is a little question here as to exactly what the outer surface is.

If this is the outer surface of the door (indicating) --

THE COURT: Indicate what you are pointing to, Doctor.

THE WITNESS: Just the flat front of the freezer

door.

It's hard to tell whether this spigot is in front of this or not. If we are talking about this piece right here being in front of the door, which is actually the dispensing housing, the spigot is behind the front of this. But without taking it apart, it's hard to see if it's actually in front of this piece (indicating).

Again, depending on the language of the claim, you know, where it's saying the front surface of the door. If I'm saying this is the front surface of the door, I have trouble saying that's in front of it.

BY MR. MORICO:

Q. You understand that the Court has construed the term "outer surface" to have its plain and ordinary meaning, the outer surface of the door. Do you understand that?

A. Yes, right.

Q. And you understand that in this case LG argued that "outer surface" meant the plane of the door and not just the plain and ordinary meaning. Do you understand that?

A. Well, I guess it's up to the Judge to decide what the plain and ordinary meaning is.

But to me, this is a door. So this is plain and ordinary meaning. This is a dispenser housing.

Q. The dispenser is part of the door, is it not?

THE COURT: Let me see counsel for a moment.

By the way, ladies and gentlemen, from time to time -- I have now summoned the lawyers twice to the side of the Bench here. They may from time to time ask me to go over and chat with them as well and I will put on this white noise machine. It's not that we are trying to keep anything from you.

I am simply trying to make sure that the evidence you hear is being adduced or presented to you under -- and consistent with the rules of evidence. We are not trying to hide anything from you.

We will have as few of these as possible. From time to time I am going to get involved.

(The following took place at sidebar:)

THE COURT: Mr. Morico, I am trying to understand how this witness, No. 1, why you would think he would know what LG argued at Markman. And, No. 2, why it's relevant to this jury's consideration and why it's not, furthermore, confusing potentially.

MR. MORICO: I can withdraw the question, Your Honor. The problem was he was referring to the plane of the door.

THE COURT: I get that. They made the argument. But he is not a lawyer. He wasn't at Markman. None of that.

MR. MORICO: I can get this a different way,

Your Honor. My apologies.

THE COURT: You need to be alert.

MR. SHARMA: Your Honor, I have been trying to sit and be patient.

THE COURT: Counsel, don't sit and be patient. If you think there is a reason to stand up, if there is a strategic reason, fine, you try your own case. If you think something is going on that is not right, I would just as soon not be calling these sidebars.

MR. SHARMA: Thank you, Your Honor.

THE COURT: But I don't want my jury confused. That's what this is all about right now, this particular sidebar.

(End of sidebar conference.)

THE COURT: You may proceed.

BY MR. MORICO:

Q. **Thank you.**

Let's assume for argument's sake that the outer surface of the door includes this dispenser. Let's assume that for a moment. You would agree with me, then --

THE COURT: Counsel, do you have an objection?

MR. SHARMA: I have an objection, Your Honor. This is, I believe, confusing because this is not a model that we have accused of infringement. We are having a lot of questions here on Dr. Bessler's opinions on infringement

and this model has not been accused of infringing the claims that are asserted.

MR. MORICO: Your Honor, the witness has actually inspected this very unit. And I am about to go to this next unit. I am using this just for demonstrative purposes.

THE COURT: I will permit it. The objection is overruled.

BY MR. MORICO:

Q. My question again, Dr. Bessler is: In this center faucet position, the outlet does not extend beyond the outer surface of the door, if you accept my premise that the outer surface of the door includes the front face of the dispenser housing. Would you agree with me, then?

A. Yes. If you are talking about this one position, not the other one where it's all the way up, just this one position, and you are saying this is the front portion of the refrigerator?

Q. Correct.

A. Yes, then the word "dispensed spigot," which is right here, is not in front of the surface.

Q. Turning to this unit, assuming the same question, that the outer surface of the door includes the outer surface of the dispensing system, the outlet does not project beyond the outer surface of the door, correct?

A. **I think this outlet does project beyond the front surface of the door.**

Q. **Let me show you something, Dr. Bessler.**

MR. MORICO: If I may, Your Honor.

THE COURT: Please do.

BY MR. MORICO:

Q. **We have pulled one of these dispensing units out of the door and we have extended the plane and we have put sort of a molecule water coming out of the outlet. As you can see, Dr. Bessler, the water does not break that plane, does it?**

THE COURT: I wouldn't object if you gentlemen want to go over in front of the jury.

MR. MORICO: Thank you, Your Honor. I was going to ask that, actually.

BY MR. MORICO:

Q. **Assuming, Dr. Bessler, that the front surface of the door includes this outer surface of the dispensing mechanism, and the plane extends as my piece of paper shows, the water does not clearly extend outside the outer surface of the door in this case, the outlet, does it?**

A. **I would do this differently. I am sorry.**

THE COURT: Answer the question to the best of your ability.

THE WITNESS: The question is -- I think this is

outside the front. If you take this thing you have here and put it actually in the plane of this dispensing front, like I would do it, and I put it like here, that there is a part of this spigot, and especially on the one over there that I looked at, that is in front of this plane of the refrigerator. So I don't agree with that.

BY MR. MORICO:

Q. **When does it stop becoming in front of the plane? When I move it just this much, about 10 degrees or so, is that now just outside the outer surface of the plane?**

A. **Well, there is two things here. One is, you know, arguing the exact instant that it moves behind this plane, I can't tell you how many degrees that is without looking at it. It's my opinion that there is part of this that is in front of the front plane of this.**

But I think more importantly is the idea that this device is moved out from inside the dispensing cabinet so you can fill large pots, that that is really the intent of the whole patent, is to fill large containers.

So it's moving forward. That's the feature that LG was trying to patent.

Q. **Right. But we are not talking about the intent of the patent. We are talking about the claim language. You can't infringe unless you practice all the elements of the claim. And the claim, as we established earlier --**

THE COURT: Is that an instruction to the jury, counsel? Or is that a question?

MR. MORICO: I am about to get to a question. I am sorry, Your Honor.

THE COURT: Be careful.

BY MR. MORICO:

Q. **The claim requires, does it not, that the outlet of the water-dispensing arm, not just the arm itself, the outlet of the water-dispensing arm must project outside the outer surface of the door. Correct? We established that?**

A. **The claim language requires that this piece here move out in front of this door. You said -- the Judge, Your Honor, you said something else to him. But he was talking about infringement.**

THE COURT: You need to speak to the jury, sir.

THE WITNESS: You were talking about infringement. What I was saying is that even if this -- I believe this thing is in the front of here. But I think there is a legal mechanism, if you will, that says even if you try to make this thing move slightly behind here to avoid the patent, that you can still infringe. And that's a different kind of infringement, but you can still infringe.

BY MR. MORICO:

Q. **But you have provided no opinions in this case on that type of infringement, correct?**

A. **I know about it. I know --**

Q. **But you have provided no opinions in this case with respect to that type of --**

A. **I am not sure if I have or not.**

Q. **I will represent to you you have not, sir.**

A. **All right.**

Q. **So let's focus on the literal infringement analysis that you did. With respect to the outlet on this water-dispensing assembly, you would agree with me, if this rotates just a little bit, maybe 10 degrees more, maybe even a couple degrees more, even under your opinion, assuming the jury doesn't accept that it's not clearly outside the outer surface of the dispenser as I have advocated, assuming that they accept your position, how many degrees does it need to no longer become infringing?**

A. **I think, when you ask me that question, no longer becomes infringing, what I am saying to you is that this small amount of degrees doesn't really matter, because as long as this thing -- the intent of this is to get out front and fill large containers, the same way as if it was this or that position, the two or three extra degrees doesn't make a difference because you can still infringe under this other thing called the doctrine of equivalents.**

THE COURT: Doctrine of equivalents is not an issue about which I believe you have testified. We will

confine your testimony to the area we call literal infringement.

Ladies and gentlemen, you will be instructed on that subject in much greater detail when I give my final instructions. There is a difference. The Doctor has not been called to testify about what we call doctrine of equivalents at this point.

MR. MORICO: A few more questions, Your Honor.

BY MR. MORICO:

Q. You would agree with me that when this is rotated a few degrees inward, that clearly the outlet does not extend beyond the outer surface of this dispensing system. You would agree with me, would you not?

A. If we take this as the front plane and we push this in enough, whatever that enough is, eventually this spigot, where the water comes out, gets behind the front of this surface.

Q. And you would agree with me also that this spigot in this position is much closer to the center position on that manual unit than it is to the 180-degree position when the spigot is clearly outside the outer surface of the door. You would agree with me with that, would you not?

A. You are asking about the position of this spigot right now?

Q. Correct.

A. **In relation to -- can we go back over to the refrigerator?**

MR. MORICO: Can we go back over, Your Honor?

THE COURT: Yes.

BY MR. MORICO:

Q. **You would agree with me, Dr. Bessler, that when the faucet is in the center position in this manual unit, that that is much closer to the outlet in this accused device than it is when it's in the 180-egree position, which the unit says "extended position." Would you agree with me there?**

A. **I wouldn't say it's much closer. I would say it's almost right in the middle, because when you look at where this is positioned in here, it's hard to see. But it's quite a bit a ways inside here. Then it comes all the way out. Somewhere in the middle of that I think is about right where this is right now.**

Q. **Do you understand this is at 90 degrees?**

A. **Like I said, I don't have any measurement tools with me right here. It looks like it's about 90 where the stop occurs. If I look at the position relative to the front of this plane and see where this nozzle is right now, then I take it all the way out here, and I go somewhere about halfway in between, that looks to be about where that is. So I would not agree that it is much closer to one or the**

other.

Q. Dr. Bessler, I think we will leave it to the jury to decide how far out that goes.

A. I think that's a great idea.

Q. I will ask you one other question, Dr. Bessler. If we were to remove the spring from this device, it would no longer infringe Claim 21 and 36, correct?

A. If we took the spring out of that device.

Q. Right. It would no longer be spring-activated, so it would no longer infringe?

A. Without the spring, it would no longer have a spring, and also, it would not apply a force other than supplied by the user.

Q. So it wouldn't infringe 21 and 36, correct, if I took the spring out of this?

A. Well, 21 depends on 10. So it would still infringe Claim 10.

Q. But 10 is not being asserted by itself. We have already established that, correct?

A. Not by itself. But 21 depends on 10.

Q. And 21 adds a spring, correct?

A. Yes.

Q. So to infringe 21 you need to have a spring, correct?

A. Correct.

Q. And my hypothetical asked you: If there was no spring

in here, 21 would not be infringed. Correct?

A. **Hypothetically, if you remove the spring and 21 requires a spring, you don't infringe Claim 20. But you still have issues with some of the other claims in the patent, like Claim 10.**

Q. **None of which are asserted today, correct?**

A. **10 is not asserted.**

MR. MORICO: Thank you very much, Dr. Bessler.

THE COURT: You may resume the stand, Doctor.

(Witness resumes stand.)

THE COURT: Mr. Morico, have you completed your examination?

MR. MORICO: Yes, Your Honor. I have.

THE COURT: Mr. Sharma, you may redirect.

REDIRECT EXAMINATION

BY MR. SHARMA:

Q. **Just a few short questions. I apologize, you have already taken the microphone off. If you could head back to PTX-552.**

A. **I am getting pretty good at this now.**

(Witness steps down from stand.)

MR. SHARMA: If we could also pull back up I think it was PDX-11.

BY MR. SHARMA:

Q. **My question is not about the mockup but the actual**

model that is in the room. If you could take a look at PTX-552 and the claim language that talks about the water-dispensing assembly, which is positioned outside an outer surface of the door, can you tell me your opinion on that claim language as it relates to that refrigerator?

A. **Yes. I believe that this outlet --**

MR. SHARMA: Your Honor, may I turn on the camera as well?

THE COURT: Yes.

Doctor, why don't you move that mike up a little closer. Put it in your tie. It actually works better.

THE WITNESS: Okay. Is that better?

THE COURT: Yes.

THE WITNESS: Okay. I believe you asked me in the extended position, if I believe that the outlet of the dispenser is in front of the front surface of the refrigerator, which is taken to be this surface. My answer is yes. If I put my finger right here, my finger is in front of the surface.

BY MR. SHARMA:

Q. **Dr. Bessler, one other item. I believe inside the refrigerator you used a piece of paper for a model number. If you could take that back with you to your seat. I have just one more question.**

A. **Sure, I have got them.**

Q. **If you could return to your seat, because I have another document I am going to pull up for you.**

A. **All right.**

(Witness resumes stand.)

THE COURT: Ms. Walker, why don't you get that mike, or we are going to get feedback.

(Witness resumes stand.)

BY MR. SHARMA:

Q. **Now, Dr. Bessler, I don't want to talk to you about mockups. I want to talk to you about actual models that we are accusing of infringement. Can you go to PTX-711?**

A. **Okay.**

Q. **PTX-771, I am sorry.**

A. **I have it here.**

Q. **Do you see the model number from that Kenmore refrigerator that you gave opinions on on that list?**

A. **Just give me a second. There is a lot of numbers here. I am sure it's on here. But I have to find out where.**

Q. **I believe it's on the second page of the list. And the model number is 465870380; is that correct?**

A. **Yes. If you look at the chart you have there on the fourth column, about two-thirds of the way, three-quarters of the way down, the numbers are sort of in sequence, and there it is, 465870380.**

Q. **And your opinions on infringement apply to that model and all the models on that list, correct?**

A. **Correct.**

MR. SHARMA: No further questions, Your Honor.

THE COURT: Doctor, before you step down, you discussed earlier the person of ordinary skill.

THE WITNESS: Yes.

THE COURT: Did you have a time in mind as to when you gave that definition?

THE WITNESS: Yes. That would be at the time when these patents were being filed for. That was my understanding. Like 2003-2004 time area.

THE COURT: Thank you. You are excused. Thank you, sir.

(Witness excused.)

MR. DAVIS: Good morning. The next witness is coming in just right now. If I could have Mr. Herrmann hand out the photos we have.

My name is Walter Davis on behalf of LG.

The plaintiffs call Young Noh.

(Interpreter Mr. Kim returns.)

... Young Noh, having been duly sworn as a witness, was examined and testified as follows ...

MR. DAVIS: I should have mentioned before that Mr. Noh is also going to attempt to testify in English

today, but I would like the assistance of the interpreter.

THE COURT: Okay.

MR. HERRMANN: We may have taken his witness notebook away.

THE COURT: Thank you, Mr. Herrmann.

Good morning.

DIRECT EXAMINATION

BY MR. DAVIS:

Q. Good morning, Mr. Noh.

A. Good morning.

Q. Are you going to testify in English today?

A. Yes, I will try, but I would like to have a translator when I need it.

Q. Where are you currently employed?

A. I am working for LG Electronics, U.S.A., which is located in Englewood Cliffs, New Jersey.

Q. What do you do for LG Electronics, U.S.A.?

A. I am a product marketing manager for refrigeration.

Q. How long have you been with LG?

A. I have been with LG for about 11 years.

Q. What are your current job responsibilities?

A. I am a product marketing manager. Product marketing manager is kind of a customer manager, handling almost everything about that product category.

I am talking about refrigeration. I am in

charge of that. And I do inventory management and product lineup management and then marketing communication, and so on.

Q. **I would like to discuss refrigerators a bit with you today.**

Mr. Noh, when did LG first introduce LG-brand refrigerators in the U.S.?

A. **It was June, around June 2001.**

Q. **And prior to June 2001, what was LG's experience with LG-brand refrigerators outside the U.S.?**

A. **In 2001 LG was already a very strong global refrigeration player. Other than United States, we had a very nice business all around the world. We had a business in Europe, the Middle East, Asia, and Australia, and Russia, South America. LG was one of the global leaders in the refrigeration business.**

Q. **What kind of refrigerators did LG sell outside of the U.S. prior to June 2001?**

A. **Because LG was operating in a global manner, we had all types of refrigerators, like top-mount refrigerators for Asian market and the Middle East market. And bottom-freezer refrigerators for European market. And side-by-side refrigerators for Korean domestic market and Australia market.**

Q. **When did LG begin making bottom-mount refrigerators**

for the European market?

A. **Actually, I am not sure exactly from what time. But I am very sure that we did a bottom-freezer refrigerator business at least before 1999. I joined in 1999. And I was in charge of the European market at that time. And we did a pretty good business in European market for bottom-freezer refrigerators.**

Q. **What was LG's marketing philosophy when it entered the U.S. market for LG-brand refrigerators?**

A. **When we were starting refrigeration business in 2001, refrigerator was the first product we are bringing with the LG brand in this market. So building LG brand as a premium brand was the most important thing at that time.**

And we thought a premium band is possible only through product leadership. So we emphasized a lot about technological innovation and stylistic design to make our product different from others that were already available in the market.

Q. **And what type of refrigerators did LG sell in the U.S. when it first entered?**

A. **When it first entered in 2001, we started with the only available product at that time, like a top-mount refrigerator, and small-size bottom-freezer refrigerators and slightly small-sized side-by-side refrigerators. However, we did have our plan to develop U.S.-dedicated**

product, like U.S.-sized top-mount and U.S.-sized bottom freezer or refrigerators.

Q. **If you could turn to the tab, it might be the only tab at this point, to PTX-108.**

Can I get to PTX-108?

Mr. Noh, what is PTX-108?

A. **This is official registration document for product development planning.**

Q. **What model?**

A. **This is for 20-cubic-foot and 22-cubic-foot bottom-freezer refrigerators. The one I said U.S.-dedicated bottom-freezer refrigerator.**

Q. **What is the significance of PTX-108?**

A. **When you have this official registration, it means you did a lot of market research and consumer research, and you decided what kind of work picture you will bring with this product. It means now you can invest actual money for the model that will be used producing the refrigerator. And you are going start to use human resources developing this new product.**

Q. **What is the date on PTX-108?**

A. **This is dated December 20, 2001.**

Q. **What does that mean?**

A. **As I explained, it takes around six months to study features and consumer requirements. In that case, we**

already started studying this product six months before this date.

Q. And when would that be in this case?

A. It would be around June 2001.

Q. How does that compare to the time that LG entered the U.S. market?

A. It's a very similar time we entered this market.

Q. When did LG start selling the bottom-mount refrigerators of PTX-108?

A. If you look at the document 0724059, it shows the target production date of April 2003. Actually, this model is launched around that time, as far as I remember.

Q. Does LG currently sell bottom-mount refrigerators in the U.S. other than the type shown in PTX-108?

A. Currently, we are also selling three-door bottom-freezer refrigerators and four-door bottom-freezer refrigerators.

Q. When did LG start selling bottom-mount refrigerators with three or more doors?

A. We started to sell three-door bottom-freezer refrigerators from around April 2004.

Q. That's in the U.S.?

A. That was in the U.S.

Q. How about outside the U.S.?

A. Outside the U.S., we had, actually, six-door

bottom-freezer refrigerators for Korean domestic market, like early 1990s.

Q. **Could you describe that six-door bottom-mount refrigerator, please?**

A. **That was a bottom-freezer refrigerator with four freezer doors, with two freezer doors, and two refrigerator doors in French door shape.**

Q. **What about bottom-mount refrigerators from companies other than LG?**

A. **Actually, European market as a competitive-size bottom-freezer refrigerators, and Japanese market has a lot of different shape of bottom-freezer refrigerators. They have a three-door, four-door, sometimes five to six doors bottom-freezer refrigerators.**

As far as I know, Japanese market had that type of refrigerators from late 1980s or early 1990s.

Q. **Thank you. You can put PTX-108 aside.**

What kind of resources does LG invest in research and development?

A. **We are very proud of our commitment for R&D. Globally we have around 82,000 employees. Out of 82,000 employees, about 16,000 employees are working for R&D center.**

We have manufacturing R&D center, but we also have -- it's called core technology R&D center as well. Core technology R&D center has a core technology and core

components. They handle all types of vertical integration of technology and horizontal integration of technology.

Q. **What is vertical integration of technology?**

A. **Vertical integration of technology means you have technology of a core component within your house. We manufacture and develop refrigerator compressor, we manufacture and develop washing machine motor, and we also manufacture and develop dishwasher motor, and compressor for air conditioner as well.**

If you have vertical integration, you have a core technology and core component within your house. It is an advantage to bring technological innovation faster and make your product more reliable.

Q. **Has LG's marketing philosophy worked?**

A. **Yes. If you consider the market share, when we were studying LG-brand business in 2001, we were nearly -- we had nearly zero market share. Over the last year in the refrigeration, we have around 9 percent of the market share.**

If you look at the product category of French-door refrigerators, which LG is focusing on, we had around a 17 percent market share in the market, ranking No. 2 next to Samsung Electronics. In case of 2008, we were No. 1, around 20 percent of market share in French-door refrigerators.

Q. **What about brand awareness?**

A. **We improved brand awareness a lot. In 2001 we had nearly no brand awareness. But these days we are enjoying brand awareness of more than 90 percent of brand awareness.**

Q. **Who are LG's main retail customers?**

A. **Sears, Home Depot, and Best Buy.**

Q. **That was Sears, Home Depot, and Best Buy?**

A. **Yes.**

[redacted]

Q. **How does LG's philosophy of innovation and style apply to its products, its refrigeration products specifically?**

Let me ask a different question. How does LG's philosophy of innovation and style compare to products other

than refrigerators? Let me ask that first.

A. Actually, as I explained, our philosophy about product leadership and technological innovation and stylish design is our brand recognition. It applies not only for refrigerator. It applies for washing machines, dryers, and dishwashers and ranges and all the cooking products as well.

Q. How important is marketing to LG?

A. Marketing is as important as product leadership. Even if you have a very nice product, if you don't have a very nice marketing activity, you might not be able to sell product very well.

By the same token, even if you have a very nice marketing strategy, if you have a -- if you don't have a competitive product, you might not be able to sell a product very well.

So in order to be successful in the market, you need both product leadership and nice marketing activity.

[redacted]

Q. **I just have a few more questions for you.**

How are the features that LG offers in its refrigeration products related to LG's growth in the market?

A. **We believe we grew because of technological innovation. And we do our best, whenever we bring new product, to introduce our new product with a new innovation and stylistic differentiation.**

For example, titanium finishes and hidden dispenser and electronic temperature control and multi-air duct cooling system, and bright interior lights and hidden dispensers and two- and three-freezer drawers. Those kinds of innovations.

Q. **What is the hidden dispenser?**

A. **Hidden dispenser is a unique design for a dispenser. When you don't use it, it's like the refrigerator looks like it doesn't have any dispenser. It's just a clean and fresh look.**

If you press a button, ice and water dispenser pops out. And then under the popped-out ice and water dispenser, you can fill any size or any shape of a container with ice and water.

Q. **What is the significance of being able to fill a container of any size?**

A. **Actually, consumer uses a dispenser more than you realize. They use not only for drinking water, they use it**

for cooking, they fill not only just a glass, they fill sports bottle and big pot for cooking.

So having that kind of technology is a big convenience.

Q. **Why do consumers use the refrigerator for cooking?**

A. **Because a consumer thinks refrigerator water, because it has a water filtration system, they believe the water is cleaner than tap water. So it is used more than you believe.**

MR. DAVIS: Thank you, Mr. Noh. I have no further questions for you.

THE COURT: Counsel, cross-examine.

MR. PARTRIDGE: Your Honor, I am going to introduce new counsel to the jury and to the Court. This is Ms. Amanda Woodall, who will be doing the examination of this witness.

THE COURT: Ms. Woodall.

CROSS-EXAMINATION

BY MS. WOODALL:

Q. **Good morning, Mr. Noh.**

A. **Good morning.**

Q. **We met last summer. Do you recall that, possibly, at your deposition?**

Now, you mentioned a hidden dispenser that LG was introducing; is that correct?

A. **Yes, that is correct.**

Q. **But isn't it true that LG has not ever sold a product in the past with an extendable water arm such as is covered by the '121 patent?**

A. **'121 patent is -- I do not know exactly about '121 patent. What is '121 patent?**

Q. **You are aware that LG is asserting certain patent claims from one of its patents in this suit against Whirlpool?**

A. **Yes.**

Q. **Has LG ever sold an LG-branded product with an extendable water spigot?**

A. **(After consulting interpreter) If you are talking about LG-branded product, it is not true. But we sold hidden dispenser for Kenmore brand, under Kenmore brand.**

Q. **So the extendable water arm is a feature that you have produced only for Kenmore; is that correct?**

A. **That is correct.**

Q. **Earlier you were talking about LG's mindset and plans in about the 2001 time period for getting into the United States markets. Do you recall that?**

A. **Yes.**

Q. **And you said that you were looking to introduce your products into the United States at a premium level. Do you recall that?**

A. **Yes.**

Q. **And that part of your approach to doing that was to introduce a premium brand for product leadership, innovation, and stylistic leadership?**

A. **Yes.**

Q. **And that would include the introduction of advanced technology, wouldn't it?**

A. **(After consulting with interpreter) Yes.**

Q. **If we could turn to PTX-108, which your counsel used with you earlier. Do you recall this document?**

A. **Yes.**

Q. **And you testified that there would have been some preliminary work done, some research and investigation work, starting about six months prior to the date on this document of December 20th, 2001. Correct?**

A. **Yes.**

Q. **But you have not come to court today with any documents showing those plans or research or anything that took place prior to December 20th. Correct?**

A. **I didn't bring any document.**

Q. **Do you recall discussing the introduction of French-door, bottom-mount in the United States market?**

A. **Yes.**

Q. **You indicated your market share for French-door bottom-mount in certain years. Do you recall that?**

A. **(After consulting interpreter) The market share I talked about previously was not for bottom-freezer refrigerator but for bottom freezer with a French-door refrigerator.**

Q. **So what we sometimes call a French-door bottom-mount?**

A. **Yes.**

Q. **What was LG's market share in the United States for French-door bottom-mounts in 2005?**

A. **You mean our market share in 2005?**

Q. **In the United States, for that platform, yes.**

A. **Total refrigeration?**

Q. **No. Just for French-door bottom-mounts.**

A. **I don't remember our market share for bottom French door.**

Q. **When did you first introduce a French-door bottom-mount in the U.S.?**

A. **From 2004. And we increased the market share from that time very much, and we reached No. 1 market share in 2008.**

Q. **I am going to show you a document. It's PTX-158. Have you seen this document before?**

A. **Yes.**

Q. **I am going to pull up the page that is 236594, please. Are you familiar with the graph shown on this page?**

A. **Yes. It's showing total market demand in the market.**

Q. **Is that market demand or is that the number of sales that LG has had during that time period?**

A. **I believe, looking at the number, it just shows the market, the total market demand.**

Q. **Is it your understanding that this document was material presented to Home Depot by LG regarding its capabilities in the refrigeration area?**

A. **That is right.**

Q. **And so on this page that we are looking at, this was LG telling Home Depot about its incredible growth in the French door category; isn't that correct?**

A. **This is showing incredible growth over French door demand in the market, not LG's growth. This chart is explaining. French door is increasing in the market very fast. So, you say to a person, you have to understand, consumers are looking for French doors more and more and more. That is the point of this chart.**

Q. **And we see that there was market growth between 2005 and 2006 in LG's French-door bottom-mount sales?**

A. **As I explained, this is the total market growth. LG also increased the market share very much during that time frame.**

Q. **Could you now turn to page 236606, if that is in the exhibit, please?**

You see here that LG is talking about its

improved convenience for its tall ice and water dispenser in this presentation to Home Depot?

A. **Yes.**

Q. **You understand that LG does not have a patent that covers a tall ice and water dispenser?**

A. **I am not very good at patent. I am just in marketing. So I am not an expert for patent.**

Q. **And this is showing that LG only uses, in connection with its LG-branded refrigerators, the slide-out tray, but again, does not use the extendable water spigot. Correct?**

A. **This dispenser features extendable tray, but it doesn't have an extending water faucet.**

MS. WOODALL: That is all my questions. Thank you.

THE COURT: Mr. Davis, your redirect.

MR. DAVIS: No further questions.

THE COURT: Thank you, Mr. Noh.

(Witness excused.)

MR. COYNE: Your Honor, we are going a little faster than I expected.

Thank you, Your Honor. I apologize for the delay. Your Honor, LG calls John Herrington to the stand at this point.

... John Herrington, having been duly sworn as a witness, was examined and testified as follows ...

MR. COYNE: Your Honor, may I hand up the pages for the witness book?

THE COURT: Please do.

DIRECT EXAMINATION

BY MR. COYNE:

Q. **Good morning, Mr. Herrington.**

A. **Good morning.**

Q. **Where are you employed?**

A. **LG Electronics.**

Q. **The jury has heard a little bit about your story. How are you feeling about testifying today, sir?**

A. **I am nervous, and I am embarrassed about my behavior as it relates to this case.**

Q. **Why?**

A. **Because I have created some uncertainty for my company, and I have created some uncertainty for my family.**

Q. **Sir, where were you employed before you joined LG?**

A. **Amana Appliances.**

Q. **What were you doing there?**

A. **I was vice president of marketing and sales.**

Q. **For how long?**

A. **I was with Amana from '92 until 2001.**

Q. **And who owned Amana when you first started working for them?**

A. **Raytheon Company.**

Q. **Was there a change of ownership of Amana?**

A. **Yes.**

Q. **What was that?**

A. **At some point, Goodman Manufacturing, which is a Houston-based company, acquired Amana Appliances.**

Q. **When did that occur?**

A. **I don't know the exact date. Late '90s. '97. '96-'97.**

Q. **What was your relationship with Goodman while you were at Amana?**

A. **They were the owners of the company.**

Q. **And did you have any agreements, an employment agreement at that time?**

A. **I did.**

Q. **What was that?**

A. **I had a bonus program with Goodman and I had a retention program with Goodman. A retention program, at some point Goodman announced they were going to sell the company and they offered certain employees a retention program to stay with the company through the sale.**

Q. **Was there a subsequent sale of Amana?**

A. **Yes.**

Q. **To whom?**

A. **Maytag.**

Q. **When did that happen?**

A. **It happened in 2001.**

Q. **What happened to your position when Maytag acquired Amana?**

A. **My position was eliminated. I was offered a job to go to work for Maytag. And I elected not to pursue that opportunity and to go do other things.**

Q. **Why didn't you take the Maytag offer?**

A. **The job that Maytag offered me was to be vice president of the refrigeration category, so it was a technically oriented job, and I was more interested in selling and working with customers.**

Q. **When did you finish up at Amana?**

A. **I finished up in -- I believe in the July time frame.**

Q. **What did you do after you finished up at Amana?**

A. **I started looking for jobs.**

Q. **What did you find?**

A. **I found it took longer than I realized. I had a number of interviews and a number of opportunities and a number of second interviews. And ultimately had interviewed with LG Electronics in New Jersey, and accepted a job with LG.**

Q. **Well, had you had any prior contact with LG before you were looking for a job with them?**

A. **I had an opportunity to go to South Korea to visit LG in 2001, I believe it was 2001, and visit the factories and**

visit the facilities. So I have had prior contact.

Q. **That was while you were at Amana?**

A. **Yes.**

Q. **Why were you going to LG while you were at Amana?**

A. **Amana purchased certain microwave ovens and other products from LG.**

Q. **Did you have any other offers that you got -- let me ask you first: What did you think of LG when you visited them in 2001?**

A. **I was amazed. I had never seen a company that had cleaner factories, had more technology and a more motivated workforce than I had ever seen in the appliance business.**

Q. **When you finished up at Amana and you were looking for a job, how long were you out of work?**

A. **I was out of work for four months.**

Q. **Did you get any other offers or any other prospects?**

A. **I was in the process of interviewing with Goodman, which was my prior employer. And they had indicated to me that they were going to give me an offer. But they had not come forward with an offer and I had made a commitment to LG to get back to them by a certain date, accepting their offer. And I did that.**

Q. **Did you talk to Goodman about accepting the LG offer?**

A. **I did.**

Q. **What was the discussion with Goodman about the LG**

offer?

A. **I indicated to Goodman that I was in the process, I had an offer on the table. I was going to go to work -- I needed to accept that offer or decline that offer. And if they were going to come with an offer, they needed to do so quickly because I had to make a decision.**

Q. **Why did you go with LG in particular at that point? Why not just keep looking for something else?**

A. **I was excited about going to work for a company with the capability of LG.**

Q. **What capabilities in particular interested you?**

A. **Just, as I said, the enthusiasm and the commitment to the appliance industry, and the opportunity to go out and build new customer relationships and build the business together.**

Q. **When did you start at LG?**

A. **I started December 26th, 2001.**

Q. **What was your role when you started then?**

A. **I was vice president of sales.**

Q. **Did you have any technical responsibilities?**

A. **No.**

Q. **Did anyone at LG ever ask you for any confidential information that you had while you were at Amana?**

A. **No.**

Q. **Did you ever volunteer or share any confidential**

information while you were at Amana?

A. **Absolutely not.**

Q. **Sir, I know this is going to be sensitive issues, so I apologize in advance. But your deposition was taken in August of last year, right?**

A. **Yes.**

Q. **You testified at that time that you took only personal papers when you left Amana; is that right?**

A. **Yes.**

Q. **What happened after the deposition?**

A. **As you indicated, a question was asked of me at the deposition if I had taken any documents from Amana, and I indicated personal documents.**

I drove home, and over the course of the next day began thinking a lot about my time at Amana. It was eight years prior to the August deposition. And I began thinking about all of the questions and about whether I answered them as accurately as possible, and I had a nagging feeling that I may have a document from Amana somewhere in my house. And I decided to go and look for that document.

In our home we have what used to be -- I was single when I moved into our house. There was sort of a makeshift home office in one of our rooms upstairs. I got married four years ago. It's now a guest room. And I knew --

THE COURT: Do you have an objection?

MR. PARTRIDGE: Objection, 611. If we could have some Q&A, Your Honor.

THE COURT: Mr. Coyne.

BY MR. COYNE:

Q. **Tell me about the home office and what did you want to tell me?**

THE COURT: What did you want him to tell you?

BY MR. COYNE:

Q. **What did you find?**

A. **I looked and I found a document in the top of the shelf in the closet where I had a lot of things that was titled, "1997-1998 Bottom Freezer Study From Amana."**

Q. **What was your reaction when you found it?**

A. **I couldn't believe when I found the document. I panicked. It was a three-ring binder. I took the document into the kitchen, I emptied the contents, I ripped the pages in half, I threw it in a Hefty bag. And we -- in our community we have a community garbage collection. And I threw it in the garbage.**

Q. **Did you recognize the document when you saw it?**

A. **I recognized it. I didn't page through the document. I recognized it as a report from a group -- market research company called Monitor that had done work with Amana over the course of a couple of years.**

Q. **What kind of work had they done?**

A. **Market research and market studies and things of that nature.**

Q. **Well, if it was just a market research study, why did you panic when you saw it?**

MR. PARTRIDGE: Objection. Leading.

THE COURT: It is leading. Could you rephrase?

MR. COYNE: Yes, Your Honor. What he said a moment ago, he panicked when he saw it, I am just asking why he panicked.

THE COURT: Fair enough.

THE WITNESS: Because the day before I testified in the deposition that I had no documents from Amana.

BY MR. COYNE:

Q. **Why would that cause you to panic?**

A. **Because it was inconsistent with my testimony of the prior day.**

Q. **Sir, what were you feeling like when you saw this document, when you realized you had this on your shelf?**

A. **My heart sank to the floor. I felt terrible. My first reaction was just to get rid of the document.**

Q. **Why? Why not just call somebody, call counsel at LG?**

MR. PARTRIDGE: Objection, leading.

THE COURT: No. Overruled.

THE WITNESS: I just reacted emotionally to the

situation because I had testified the day before that I had no documents.

BY MR. COYNE:

Q. **Were you concerned about something else that was in the document?**

A. **No.**

Q. **Well, sir, okay, you have destroyed the document. Did anybody else know that you had found it in the shelf?**

A. **My wife and kids were gone the latter part of that week and returned either Friday or Saturday. And I spoke to my wife about it over the course of the weekend.**

Q. **Let's go back to the point where you saw it and reacted and destroy it. Did anybody else know you had found it at the time you found it?**

A. **No.**

Q. **Did you tell anybody else you had found it at the time you found it?**

A. **No.**

Q. **Was there any way anybody could have found out that you had found it at that point.**

A. **No, not that -- not that I can think of.**

Q. **Did you make a deliberate decision to destroy it?**

A. **I made an emotional decision to destroy it. I found that I was shocked, and I just reacted emotionally. I am embarrassed to say that that is what I did.**

Q. **If nobody knew about it, then why did you come forward?**

A. **Because I didn't want to live with knowing that on one day I said I had no documents and the next day I discovered a document. I didn't really want to go through my life knowing that that is what I was doing.**

Q. **Well, when did you come forward? You said that you destroyed this and you talked to your wife over the weekend. Who did you talk to, and when did you come forward about it?**

A. **On Monday morning I went to our general counsel at LG and told him what I had done.**

Q. **Okay. And what did you do next?**

A. **I followed the instructions of the lawyers.**

Q. **Did you find any other documents?**

A. **They asked me -- I didn't want to go back into the room after I had discovered this document, back into the office. And I was advised to search high and low for any and all other documents that there might be. And that's what I did.**

Q. **What did you do with those?**

A. **I turned those over to my company.**

Q. **And was there a subsequent deposition after you produced those other documents?**

A. **Yes.**

Q. **Have you found anything else?**

A. **No.**

Q. **Sir, how are you feeling about this situation now?**

A. **I feel embarrassed, as I said. And I feel very badly about the situation now.**

MR. COYNE: No further questions of Mr. Herrington at this time, Your Honor.

THE COURT: Mr. Partridge.

MR. PARTRIDGE: Thank you, Your Honor.

CROSS-EXAMINATION

BY MR. PARTRIDGE:

Q. **Good afternoon, Mr. Herrington. I had to check to see if we were in the afternoon. We are. We have not met previously. It is nice to meet you. I appreciate the difficulty of the circumstances that arose, and I need to ask you a few questions that relate to that.**

First, I would like to begin with some of the things that you have described in your initial testimony with respect to Amana. I think you said you had been at Amana from around '92 to 2001. Is that right?

A. **Yes.**

Q. **And at the end of that period of time, you were the vice president of sales for Amana?**

A. **I was vice president of marketing and national accounts.**

Q. **Did that include refrigerators?**

A. **Yes.**

Q. **And during that eight or nine years you had been at Amana, was your responsibility largely in the area of marketing and sales of Amana products?**

A. **It was largely in the sales function. But parts of my tenure were in marketing as well, yes.**

Q. **And marketing and sales that you were doing during that time period related to home appliances, including refrigerators. Is that fair?**

A. **Yes.**

Q. **Was that your first experiences in your professional career in marketing and sales of products like refrigerators?**

A. **My time at Amana?**

Q. **Yes.**

A. **Yes.**

Q. **And during that time at Amana, Amana was one of the market leaders in that space; is that correct?**

A. **In which space?**

Q. **In the kitchen appliance space.**

A. **Amana had a very strong position in bottom-freezer refrigerators. That was a strong category for Amana.**

Q. **The bottom freezer was one of its main products in terms of the refrigerators offered by Amana. Is that what you are saying?**

A. **There were many products, but it was certainly one of the larger categories, yes.**

Q. **During that period of time, given the activities in which you engaged, you were familiar with bottom-mount refrigerator offerings of Amana; is that fair?**

A. **Yes.**

Q. **When you joined LG in December of 2001, is it fair to say that at best LG had a very limited assortment of small refrigerators that it was offering in the United States marketplace?**

A. **Yes.**

Q. **It was a relatively clean slate that you were walking into at that time, with respect to its efforts to get into the U.S. refrigerator market. Is that correct?**

A. **Yes.**

Q. **And if I understand correctly, I get this somewhat from some of the things I heard yesterday in the opening, that you over the next several years were quite successful in building up the sales force and enabling LG to begin to penetrate the U.S. market. Is that fair?**

A. **Yes.**

Q. **Did you understand that when LG hired you in 2001 into a position in which you became the vice president of sales, that your knowledge and experience with respect to the marketing and sales that you acquired while you were working**

for Amana was important in your hiring at LG?

A. **I think my sales and track record and my sales experience was important in my hiring at LG.**

Q. **That would have included the eight or nine years while you were at Amana learning the business of Amana, correct?**

A. **Well, I think it was that and my experience since 1985. So the additional seven years I had selling washers and dryers with Speakman Company as well.**

Q. **In the next few years after you joined LG, a number of other people, Jacquelyn Graham, Tim Cavanaugh, Dave Hoffman, all hired by LG, these were people that you knew from your days at Amana; is that correct?**

A. **Yes, there were a number of people that joined the company. Some had been with Amana. Some had been with Maytag.**

Q. **But a group of people came from Maytag and Amana to LG to help in the marketing and sales efforts of LG; is that fair?**

A. **Well, I wouldn't say it was a group. We hired individuals as we had needs in the marketplace, as the business grew. So there were some people that joined the company over the course of time that had backgrounds with Maytag, I mean.**

Q. **So you have known for some time -- obviously, you knew when you left Amana that it was going to become part of**

Maytag and then you learned thereafter that Maytag became part of Whirlpool, correct?

A. **Yes.**

Q. **So when your deposition was taken on August 19th, 2009, you knew as of that time that the company that was taking your deposition, Whirlpool, through the lawyers at my firm, was representing a company that now included Amana, Maytag, as well as Whirlpool. Correct?**

A. **Yes.**

Q. **With respect to the products that Amana was selling prior to your departure, those bottom-mount refrigerators that you described, you were aware that those bottom-mount refrigerators included a number of different features, one of which was something that's called a pop-up drawer, pop-up lid for a refrigerator drawer. You were familiar with that while you were at Amana; is that correct?**

A. **I was familiar with -- I am not sure which drawer you are describing.**

Q. **A drawer that when you pull it out, there is a lid on it and the lid rises as you pull the drawer out?**

A. **Yes.**

Q. **Amana had that kind of product in the '90s while you were there?**

A. **I don't know exactly the year. But I am familiar with that feature and that it was available in the '90s.**

Q. **I apologize, I just interrupted you. I will try not to do that.**

That particular feature was in Amana's bottom-mount refrigerators, correct?

A. **Yes.**

Q. **At your deposition on August 19th, you were asked a number of questions about the Amana bottom-mount refrigerator with that pop-up drawer. Do you remember that?**

A. **I remember it, yes.**

Q. **So when you left that deposition that day, you knew that there was something that Whirlpool was going after that related to Amana's bottom-mount refrigerator. Correct?**

A. **I don't know if I left thinking that there was something Whirlpool was going after. I don't know if I could say that that is accurate.**

Q. **But you were asked questions about that bottom-mount refrigerator and questions about this pop-up drawer in that refrigerator, correct?**

A. **Yes.**

Q. **Did you know at the time of the deposition -- strike that. Let me start over again.**

You are aware of the fact that in this litigation at various times there have been different allegations that have been made by the parties, meaning that today we have three patents in this case, but at one time

there were more than three patents in this case? Are you aware of that?

A. Yes.

Q. And at the time of your deposition, there was a patent in this case of LG's that related to a pop-up lid for a drawer in a refrigerator. Correct?

A. I don't know specifically what the patents -- you know, what the content of the patents were.

Q. Well, I will represent to you that there was such a patent in the case, and that you have made clear, I think, to me that at the time of the deposition there were questions directed to Amana's product that had this pop-up lid that popped up on a drawer. Correct?

A. I remember being asked questions about the pop-up drawer, yes.

Q. So when you went home and entered the -- was it a bedroom did you say?

A. Guest room. Yes.

Q. When you entered the guest room and you looked in the closet, the notebook that you found referenced a bottom-mount refrigerator; is that correct?

A. The notebook I found, the cover said, "1997-1998 Bottom Freezer."

Q. The very subject that you were asked about in your deposition that month, correct?

A. **I don't --**

Q. **The subject of bottom-mount refrigerator at Amana you were asked about at your deposition?**

A. **Yes, I was asked about bottom-mount refrigerators at Amana. But I was asked many things over the course of six hours.**

Q. **I am only focusing on this one thing. I understand that you did not look at the contents of the notebook. You saw what the subject matter of the notebook was, but you did not at the time examine the contents; is that correct?**

A. **That's correct.**

Q. **So we don't know to this day how many documents were in there, and we don't know the content of the documents, and we don't know whether it was merely a market study or something else. We just don't know what was in that notebook; is that correct?**

A. **Well, what I can tell you is that I am -- over the course of two years was very familiar with the work by Monitor, and so the types of things that those studies involved were consumer research and market size and market characteristics and trends and so on.**

Q. **I don't want to take the time to show you your deposition transcript. Suffice it to say, you did not look at the contents of the document before you destroyed it. You got the -- excuse me, the notebook. You got the**

notebook out, you took it to your kitchen, you tore up the pages, you threw them away, you put them in a garbage bag, and threw it out. Correct?

A. Correct.

Q. At the time all of this happened, did you understand that you were under an obligation to produce documents that were requested in this litigation by Whirlpool? In other words, had requests been made of LG to make to you to produce certain documents. You understood that?

A. I don't recall being asked to do that.

Q. That you were not asked by the lawyers to do that?

A. I am certain I was, but I don't recall specifically being asked to search for documents relative to this case.

Q. And prior to your deposition, just prior to your deposition, as best you recall, you did not undertake any further search for documents that were specifically requested from you by Whirlpool. Is that correct?

A. That's correct.

Q. At the time -- strike that.

I think that's fine, Your Honor. I will stop right there. I think that's sufficient.

THE COURT: Mr. Coyne, do you have any additional questions?

MR. COYNE: Just a couple questions, Your Honor.

REDIRECT EXAMINATION

BY MR. COYNE:

Q. **This Monitor report, sir, is this time-sensitive information or is it just the kind of stuff that is reference material?**

MR. PARTRIDGE: Objection, leading.

THE COURT: It is leading.

BY MR. COYNE:

Q. **Are market research studies reference material of some type?**

A. **The study, as I said, was 1997 or 1998. So that data is about as good as when it was done. In other words, it becomes less valuable through time because consumers change and the market changes.**

Q. **Just one last question, sir.**

Mr. Partridge was asking you about your time at Amana. When you were at Amana doing this work, were you moving around a lot or were you in one place?

A. **I moved -- I have moved eight times. In my career, I think I have moved four times with Amana. I would have to check. But quite a few times.**

Q. **Can you explain to the jury how the document got in your closet?**

A. **There is only two possibilities that I know of. One, I was reviewing the document and had it at my home in Iowa. The other was when I left, it may have been packed up with**

other things and ended up in a box.

When I moved to New Jersey, I was in temporary housing for a year, and all of my things in Iowa went into storage.

So at some point I unpacked all of my things and put them into this sort of catchall closet in this room. And I am certain that that is how it got to my closet.

Q. Why did you keep it?

A. I don't -- you know, I don't know why I kept it. I think -- my best guess is I was just unloading files and books and things and putting them in the closet. And I wanted to get the packing and unpacking over with.

MR. COYNE: No further questions, Your Honor.

MR. PARTRIDGE: Your Honor, if I may. That first question prompted something that went beyond what was elicited in the previous examination.

THE COURT: I normally don't permit recross, but just in that limited area.

MR. PARTRIDGE: I appreciate that, Your Honor.

RECROSS-EXAMINATION

BY MR. PARTRIDGE:

Q. Your deposition was in 2009. These documents were from 1997 or 1998, some 12 years later, after Amana had gone from Amana to Goodman to Maytag to Whirlpool. Did it occur to you that the existence of marketing data with respect to

Amana's bottom-mount freezer might be relevant to Whirlpool's ability to prove that that Amana product had been on sale long before any of the patents or any of the issues that had been raised by LG in this case?

A. **I am sorry, can you restate the question?**

Q. **Would you agree with me that for a company to find documents like Amana's documents 12 years after the fact, when that company has gone through three different acquisitions, to Goodman, to Maytag, to Whirlpool, might be a little difficult? Did it occur to you that you may actually have had the only documents from that time period that related to the marketing of that product? Did it occur to you at that time?**

A. **No, that didn't occur to me.**

MR. PARTRIDGE: Thank you.

THE COURT: Thank you, Mr. Herrington. You are excused.

(Witness excused.)

THE COURT: We will take our lunch break. We will resume at 2:00.

(Jury leaves courtroom at 12:55 p.m.)

(Luncheon recess taken.)

THE COURT: Ms. Walker, please bring in the jury.

Mr. Coyne, I take it we are doing okay on time?

MR. COYNE: Yes, Your Honor. I think we are. We are at least trying.

(Jury enters courtroom at 2:07 p.m.)

THE COURT: All right, ladies and gentlemen. Please take your seats. We will continue.

Mr. Sharma.

MR. SHARMA: Good afternoon. For LG's next witness we would like to call Dr. Mohan Rao.

... Mohan P. Rao, Ph.D., having been duly sworn as a witness, was examined and testified as follows ...

DIRECT EXAMINATION

BY MR. SHARMA:

Q. **Good afternoon, Doctor.**

A. **Good afternoon.**

Q. **What do you do?**

A. **I am an economist. I am a managing director at a firm called LECG, which is a global economics consulting firm. I am also on the faculty at Northwestern University in Chicago. I teach financial economics and corporate finance.**

Q. **Could you please describe your educational background after high school?**

A. **I have an engineering degree from the University of Michigan. I have a Ph.D. from the University of Colorado. I was in a dual Ph.D. program in economics and international relations. I have a doctoral fellowship from Harvard**

University.

Q. **Before joining LECG, could you provide for us a short description of your professional career?**

A. **I was a teaching fellow at Harvard University and after that I was a teacher at UCLA for a number of years, and, as I said, I now teach at Northwestern University and a member of LECG.**

Q. **Are you a member of any professional associations?**

A. **Yes, I am a member of a number of them. The key ones are I'm a member of the American Economic Organization, which is the leading organization for academic economics worldwide.**

I am a member of IEEE, which is the largest professional engineering professional organization. I also am a member of the Licensing Executive Society, which is the main professional organization for intellectual property, licensing and valuation.

Q. **What is your involvement with the Licensing Executive Society?**

A. **I have a longstanding relationship with the Licensing Executive Society. I served as chair of the Valuation and Taxation Committee for LES, which is one of their most important committees.**

I have taught intellectual property valuation to executives for a number of years. In fact, I double up

their most advanced intellectual property valuation course, which largely focuses on patent valuation and discusses issues such as the ones that are at stake in this litigation.

Q. **Any other experiences with technology licensing?**

A. **Yes. I have advised companies and assisted them in licensing transactions and with valuation. In addition, I am a partner at a biotechnology company where we specialize in pharmaceutical products for hemophilia, which is a deadly bleeding disorder.**

So as part of that, I negotiate typical ventures that we have with other companies, including licensing deals. So that's where I am doing it, obviously, where my own money is at stake as well.

Q. **Dr. Rao, how many times have you estimated patent infringement damages in the past five years?**

A. **On numerous occasions, probably several dozen times, including a number for -- cases that involve this particular Court.**

Q. **How many times have you testified at trial?**

A. **Probably about 15 times, including two occasions in the courtroom next-door with Judge Farnan.**

MR. SHARMA: Your Honor, we would like to offer Dr. Rao as an expert in the economics of intellectual property, licensing, and valuation.

MS. WOODALL: No objection.

THE COURT: The Court accepts the Doctor in those areas as an expert.

BY MR. SHARMA:

Q. **Dr. Rao, what were you asked to do in this matter?**

A. **In this case I was contacted by counsel for LG, Mr. Coyne, and I was asked to provide an economic analysis of the various patents at issue in this litigation.**

Q. **What patents did you do this for?**

A. **I did it for a number of patents, but the three that are remaining are LG's '121 patent and Whirlpool's '130 and the '601 patents.**

Q. **Dr. Rao, today let's talk about the '121 patent. Later in the week we will have an opportunity to talk about the other patents.**

Can you generally describe what the '121 patent is about?

A. **It's my understanding that the '121 patent is related to an ice and water dispenser on refrigerators and it particularly has an extendable tray and an extendable spigot and a mechanical drive.**

Q. **Who owns the '121 patent?**

A. **It's my understanding that LG does.**

Q. **Did you carry out any analysis with respect to the '121 patent?**

A. **Yes, I did.**

Q. **And what conclusions did you reach with respect to the '121 patent?**

[redacted]

Q. **Dr. Rao, how did you get to that number?**

A. **That number is based on what is known as reasonable royalty damages. And that usually contains two components. The first is determining a royalty rate, and then the second is applying that royalty rate to some number of infringed units that are accused in this litigation.** [redacted]

Q. **How do you determine a reasonable royalty rate?**

A. **Well, in general, a reasonable royalty rate is determined through negotiation. And basically, it's sort of like the price for a product. Price for rent, for instance, to rent an apartment or to lease a car, something like that. It's basically just a price that we pay. It's in the context of a negotiation. And there are some economic principles that guide the negotiation.**

For instance, if I am a T-shirt maker and I can charge ten bucks for a plain T-shirt and if I put a logo,

like Mickey Mouse or Winnie the Pooh or some sports team on it and I can charge $20, let's say that additional price means I can make some additional profit, let's say $5, then what that means is I am willing to pay some portion of those $5 to license that technology.

So where exactly we end up depends on the benefit we received and then the negotiation process we have with the licensor.

Q. Now, Dr. Rao, based on your experiences, how do businesses negotiate a patent license?

A. It's actually a very, very similar process. The key thing to keep in mind always is businesses are in the business for making profit. And so when they license a technology, they are looking for the additional value, the incremental value that they get from that technology. That value typically is additional profit.

So once you figure out what the additional profit is from licensing a technology, then we can figure out how to split that profit, that additional profit, into a royalty rate that would be shared. So basically those profits would be shared between the licensee and the licensor.

Q. How does this negotiation apply in a litigation?

A. The idea is to essentially have the same process, the same logic of how somebody would come to a royalty

calculation in a litigation context.

There are a couple of differences. The first is, we know that in the real world the parties at issue in a litigation did not actually sit across the table and negotiate; otherwise, we wouldn't be here.

So the first thing is we have to put on a hypothetical construct; that is, imagine what they would have done had they actually sat across the table and negotiated, which, of course, in the real world you don't have to worry about it because two parties would mutually come to the table to negotiate. So that is the first thing to keep in mind, it's a hypothetical construct.

The second is when you have direct competitors, such as what we have here, LG and Whirlpool, sometimes there may not be any economic rationale to negotiate with each other, because if -- let's say I have an important technology, and I license that to you, and because of that, if a consumer purchases your product rather than mine, then I lose all the profit than I would otherwise make on my product. But on the other hand, there may not be any meaningful royalty rate you can provide me where you are left with any profit on your own.

So there are some circumstances when you have direct competitors. You may not actually end up with a royalty rate like the way we would have in the real world.

Because of that we introduce this concept of a reasonable royalty.

So assume that you have, in a hypothetical construct, two players sit across the table from each other, they negotiate as willing licensor, willing licensee, in good faith. And what would they have negotiated that would be reasonable.

That is sort of the basic difference.

Q. **And how did you determine the reasonable royalty rate for the '121 patent?**

A. **In order to get to that reasonable royalty rate, the first step is the same as what we would try to do if we were just negotiating outside in the real world, outside of a courtroom. That is to figure out what is the value of the technology.**

So in order to figure that out, I looked at a number of things to determine that value. In this case, the technology we are looking at are the features that are covered by the '121 patent.

Q. **How did you determine that value?**

A. **There are at least three things I looked at, three types of information. The first information is to look at market research studies. And, to give an example, I looked at a study by a company called Mintel, M-i-n-t-e-l. It is a global market research company that routinely covers trends**

in the refrigerator marketplace and does surveys of consumers, potential consumers, and asks them questions about features that they like, why they are purchasing certain refrigerators, and things of that sort.

What I have noticed is ice and water dispensers are usually at the very top, among the very top features that consumers prefer. That is the first thing.

The second thing I did was look at Whirlpool's own documents, and there were a number of them that were produced in this litigation. And Whirlpool's documents, too, show that consumers, in fact, have a strong preference for ice and water dispensers in general, but more specifically, for the patented features, which are the rotating spigot and the extendable tray that you have heard about yesterday and today.

Q. **Dr. Rao, if you could turn to tab 8 of your binder, PTX-0693. If we could bring that up on the screen as well?**

Have you seen this document before, Dr. Rao? Let me give you a moment to get there. I apologize.

A. **Yes, I have. This is an example of the kind of Whirlpool studies that I have been talking about. This was a document that was done specifically on dispensers by a research company called Smith Dahmer Associates for Whirlpool. So it is essentially a Whirlpool study. And if you would turn, for instance, to page 5 of this study, and**

they are still in the executive summary of this, if you look at the last two bullets, the second last one says, for instance, "Respondents have a need for the extendable water arm because currently they have difficulty filling larger containers with filtered water." This solves the problem.

So the core of the features of the '121 patent is this extendable arm, because that provides an important solution to a problem.

The second aspect they say is that the extendable water tray and extendable water arm, when coupled together, the majority of people across segments choose it as their favorite feature.

So this is an example of demand for the patented feature that I am trying to ascertain before I come to a quantity as to what that demand is.

Q. Now, Dr. Rao, were there any other Whirlpool documents that provide similar information?

A. Yes. In fact, there are numerous other documents. Some studies done by Smith Dahmer Associates. Others that are internal to Whirlpool that are based on their own research, market research, focus group studies, things of that sort, that essentially come to similar conclusions.

Q. Dr. Rao, were there any other categories of information that you considered?

A. Yes. So now, I am giving you a flavor for the demand

for the patented feature. The next thing I need to figure out is, okay, what is it worth in this case particularly to Whirlpool. In fact, Whirlpool itself has prepared an estimate of what this technology would be worth to itself.

Q. Can you turn to tab 6, PTX-347?

A. Yes.

Q. Have you seen this document before?

A. Yes. In fact, this is an example of the document I was just discussing. It's a little hard to read here, so maybe I believe just walk you through a couple of highlights.

At some point around 2004, Whirlpool decided that it was going to create a new platform, that is a new model of refrigerators, that contained some key features. Particularly the features are related to the ice and water dispensers, and more specifically to the spigot, to the extendable tray, and a couple of other features that are called the fast-fill and measure fill.

And that particular set of features and the new platform of refrigerators they called Project Niagara. This is an estimate of what that Project Niagara is worth to them.

So what they do, for instance, if you look in the bottom half, in the second column --

Q. Dr. Rao, I apologize for interrupting. Do you need a

laser pointer or anything?

A. **That would be very helpful, thank you.**

MR. SHARMA: Your Honor, may I approach the witness?

THE COURT: Yes.

THE WITNESS: If you look in this column, there is a number that is [redacted] If you could just highlight that row, please, from there to there. What that [redacted] refers to is actually [redacted] units, which is what they are expecting to sell of these Project Niagara refrigerators.

They are expecting, because of these features, that they would be able to sell, if you look at this [redacted] that is [redacted] -- I am sorry, [redacted] they are saying that is the incremental volume, that is additional volume that they are able to sell because of these features. In other words, some people would buy the refrigerators without these features anyway, but some would buy because of these features.

And this is similar to forecasts that Whirlpool does. I have studied a number of different products of Whirlpool over time in different contexts. And this is very typical not only of Whirlpool but of how corporations typically generate forecasts of expected value before, obviously, they go invest in developing a new technology or a new product line.

They are trying to figure out whether there is enough of an adequate return for those.

This provides actually a quantifiable estimate we can use as to the value.

Q. **How do Whirlpool's early estimates compare to reality?**

A. **So this is a forecast, and chemists realize forecasts are forecasts. So we want to obviously go check to see if this actually came to pass.**

What I did was a statistical analysis, that I have some exhibits here as well, to see, when they introduced Project Niagara, which happened around mid-2005, whether they did in fact get a bump that they were expecting here. What I find is that they did get that bump.

I conducted a statistical analysis, what is known as a regression analysis, and I forgot to mention earlier that that is something that I have taught at UCLA for a number of years to Ph.D. students, and that is one of my areas of specialization.

So I built a model here, built a regression analysis, and, in fact, demonstrated that when they introduced Project Niagara, they have two phases to it. The first phase got a bump, and the first phase is related to the features that we are talking about. They had a second phase, a Niagara 2, which had some additional features, such as LED displays and external controls and so on. They got a

bump for those as well. But, of course, that is not related to these features. So I verified that in fact this forecast turned out to be true.

Q. **Dr. Rao, what did you do next in your analysis?**

A. **Okay. So the next thing is I want to obtain the inputs that Whirlpool itself has estimated and calculated that into an incremental value, incremental profit.**

So I have a table that I have prepared for that purpose.

Q. **Dr. Rao, could you turn to tab 1, PDX-14? Is this the table you are referring to?**

A. **That is correct. This table has a lot of numbers on it. I just want to jog you through the way this works.**

Basically, on the very top, you see the [redacted] **units that they were forecasting for Niagara refrigerators, and then they were forecasting this incremental sales of** [redacted] **which means that all sales, even without Niagara, they would be able to sell would be the** [redacted]

What I am trying to figure out is, what is additional profit on this [redacted] **units. What I do is, here, this** [redacted] **is what they would have made on this** [redacted] **units of sales. And the profit margin is also from the previous document we saw. So this is the Whirlpool profit margin that they estimated on those old units.**

Then I look at what they would have made on

these additional [redacted] units, and that is this roughly [redacted] That is just the estimate from this [redacted] multiplied by the new profit margin they were expecting to make. I am sorry, I misspoke. That is additional profit margin on the new features.

So the difference between those two is this [redacted] That is exactly what they were expecting to make as profits, and this is just in the one year, this is the first year.

Now I say, okay, that is [redacted] in profit. We are trying to calculate a royalty rate. A royalty rate is usually expressed as a proportion of sales. What I do is just take the [redacted] divide it by the total sales that they were expecting to make, which is the average price, again, this just comes from -- all these inputs come from the forecast document, the average price to them, not to what we as a consumer paid, because the manufacturer makes less, because there is a retailer, like Sears and Best Buy, there is a markup, so this is what Whirlpool would get for selling these refrigerators.

If you multiply the [redacted] by that, we get [redacted] again, this is in the first year. If you then divide this [redacted] by that, that gives us a value, an incremental value of [redacted] percent.

So basically, because of Project Niagara, which,

remember, has four features, four key features, they are expecting to make an additional [redacted] percent in profit. That is the value of those features.

Q. **Dr. Rao, what are the four features for Niagara?**

A. **The four --**

Q. **Dr. Rao, if I can take a step back. What is Niagara?**

A. **Niagara is that project of Whirlpool with these additional features in an ice and water dispensers that they were planning to launch.**

Q. **What are the four features of Niagara that you are referring to?**

A. **The four are the rotating spigot, the extendable tray, and then a feature called measured fill, which, instead of having to hold the cup, let's say, or a pot under it until you get the right measurement that you want, you may be able to press a button and say I want, let's say, 20 ounces. So you get that measured amount.**

And then the last one is something called fast-fill, which is basically you get twice as fast as you would normally get if you just had it as a typical filtered dispensers.

Q. **Dr. Rao, you have this [redacted] percent estimated value. What did you do next? What did you do with this [redacted] percent?**

A. **Now, the next step is we need to figure out what's the**

value of just the two patented features, rotating spigot and the extendable tray. So we need to take out the other two features from that calculation.

In order to do that, we need to think of the importance of the relative features. If we think of this as a pie, what is relevant features that we care about. That is the next step I do in my analysis.

Q. **How do you account for the different features?**

A. **We saw a document earlier, a Whirlpool document, prior to the launch of Niagara, where we saw that the rotating spigot was in many ways the problem solver. That was the feature that consumers, particularly combined with the tray, preferred the most.**

Now I look at documents after they launched this project. As I said, they launched it around mid-2005. They did some focus group studies right after that to see what the consumer reception was to these four features to figure out their relative value.

Q. **What did you learn from those documents?**

A. **I have a document that we can use where what the customer reaction seems to show is that it's a spigot that's at the heart of the benefits. Spigot is what seems to drive sales of these refrigerators.**

The others are complementary to it. The extendable tray and the spigot is something that are

together. Measure fill is something they like together in the context of the spigot. And the fast-fill as well is something they like in the context of the spigot. It's the spigot that solves the problem of being able to fill larger containers. That is the reason they are doing these features to begin with.

So it's a need for the larger containers. If you do not have the extendable spigot, what would happen is you would need such a deep cavity that it would eat into the door and to the internal space.

What the spigot solves by moving that out, the hose out, it allows you not to have such a deep cavity, but still be able to fill larger pots and whatever other containers you would like to fill. That is at the core of the technology.

Q. Dr. Rao, can you please turn to tab 9 of your binder? I believe it's PTX-695. Have you seen this document before?

A. Yes, I did. In fact, this is an example of the kind of post-research I was referring to.

So this document is a Whirlpool study, again by Smith Dahmer Associates, for it, in November of 2005, after Niagara launched. And it's called "Fast-Fill Followup."

If you turn, for instance, to page 4 of this document, this is customer reaction. So you see the rotating faucet at the top. And it says, "The rotating

faucet was highly distinguishable on the sales floor. Many consumers named the feature as a main selling point for Whirlpool Gold refrigerators."

And you have actually what I understand as direct thoughts, which is we bought it because of the rotating faucet. If you look at the bottom, it says, "Rotating faucet is fantastic."

It talks about how the faucet frequently rotated for precise dispensing and for large containers. That is exactly the solution they were trying to provide.

This is an incidence of customer reaction such that there was demand for this feature, and it appears to be that this feature was a commercial success in that sense.

Q. **Are you aware of any other documents that concern that same consideration?**

A. **Yes. There are a number of documents throughout the record that are generally similar to these. They have different combinations of what they are comparing at different points of time. At the core of it, it appears to be the spigot with others as complementary, particularly the combination of spigot and a tray. If you sort of look at the entirety of the documents, it seems to be the main feature set that seems to be of value to consumers.**

Q. **Dr. Rao, what did you do with this information?**

A. **What I am trying to do, recall, is I have these four**

features, I am trying to allocate what the value is of the two patented features. So what I have been discussing is that the core is the spigot. All the others are enhanced by it. I also looked at information later, because we have information from 2008, 2009, and so on.

One of the things I noticed is that Whirlpool, which had all these features, launched in 2009 a new French door refrigerator with -- it looks like they pulled fast-fill out of it. They have the other three features. They have the spigot and the tray and the measure fill. But they took fast-fill out of it. At least they don't advertise it. They did prior to it. I have looked at Whirlpool and Kenmore manuals. They don't seem to advertise it.

That suggests to me that ultimately all these companies are reacting to consumer preferences and demands, and it, again, reinforces that it is the spigot that is at the center of it.

To start out, I give a valuation of 75 percent for the spigot and the tray, and 25 percent for the other two features. That is my allocation among these four key features.

Q. **Dr. Rao, can you turn to tab 2, PDX-15?**

A. **Okay.**

Q. **What is this document?**

A. **This document is my calculation of unit sales and net sales on which I calculate damages. It's based on two inputs. If you go to the very bottom of this, and I will come to the top in just a moment, it's based on one document, which is an Excel spreadsheet. That is the one that begins with WP. That contains sales information that Whirlpool provided.**

The second document where you see updated, incorporating products list, PDF, February 25, 2010, that is the latest version of what I understand are the accused units in this litigation for the '121 patent.

So I take those two pieces of information. I try to merge them and summarize them, which is what generates this list.

Now, the damages are being calculated only for two years. I have summarized it for the previous two years as well, for 2006 and '7. But the damages only for 2008 and 2009. And it's something that is important to notice, that the bulk of the damages are on the Kenmore model that Whirlpool makes. Not Whirlpool's own branded model only. So those are referenced with a k-e-n. Then you have the actual model numbers are the ones in the third column.

And they usually have a few more digits to it, that indicates the color and things like that. But this is basically a platform.

Then I have the number of accused units that are in the fourth column. And then finally the revenue that they have in the last column.

If you look at 2008, for instance, the Whirlpool model is about [redacted] units of the total [redacted] accused units. So between [redacted] percent of these are essentially [redacted] models. If you look at the next year, 2009, we are now talking about [redacted] units that are Whirlpool's. Again, we are talking about something like [redacted] percent are [redacted] models.

One thing I would like to flag here, if you look at in 2009, the [redacted] model that has the number [redacted] that is [redacted] -- that is Whirlpool's [redacted] model. If you look at it in 2009, that unit sold [redacted] because it's [redacted] out of [redacted].

So that by far is the most important unit. That unit is the stainless steel unit that you see that's sitting in the courtroom, that Dr. Bessler discussed.

That unit does not have fast-fill. Fast-fill is not advertised. In fact, I looked at all the Kenmore manuals and I did not see fast-fill for any of these units at all. All we are talking about is the rotating tray and spigot -- sorry, rotating spigot and the tray and then the measure fill feature. Those are what we see.

Basically, this reinforces my allocation of 75-25 percent. But moreover, we are calculating damages only on those automatic spigots, not on the kind that you see on the left, the white refrigerator. That is a Whirlpool brand, except for one Whirlpool brand that you see, the GS6, which is automatic, the rest of them we are not calculating any damages.

Q. **Dr. Rao, you have a 75 percent allocation, and we had an [redacted] percent value. What do you do with those numbers?**

A. **So now I take 75 percent of [redacted] percent. Remember, [redacted] percent was the value for all the feature set. So I take 75 percent of that; allocate that to these two features. Those two features being the rotating spigot and the extendable tray. That gives me [redacted] percent.**

Q. **Can we go to PDX-14? I believe this is one of the documents you were talking about before. Is that shown on this slide?**

A. **Yes. If you look at that [redacted] percent, that is what we calculated as the incremental profit before. We multiply that by .75, and that gives the [redacted] percent.**

Q. **Dr. Rao, what does [redacted] percent mean?**

A. **So [redacted] percent is the incremental profit to Whirlpool. Obviously, if it paid all of that, it would have nothing left. Why would it bother to license these features? We are now back into the hypothetical negotiation, a reasonable**

negotiation, good-faith negotiation, between a willing licensor and a willing licensee.

Obviously, it would like to pay zero, but at zero LG would not be willing to license. Setting aside for the fact, again, this is hypothetical, LG may not be willing to license. But assume for the moment they are a willing licensee and a willing licensor.

So where would they come? Where would they meet? There is an economics of how bargaining works, and economic principles in an area called game theory. There is a famous economist called John Nash, who was cast in "A Beautiful Mind." Some of you may have seen it. And won a Nobel Prize in economics. He developed a solution that says the core intuition is if two parties are comfortable and the choice is either they agree to something or get nothing, they will meet in the middle. Like a slice of cake, how do we split it. Either we agree to something, have no cake or we split it.

So what I did is split it in the middle, and that [redacted] benefit would turn into a [redacted] percent royalty rate that Whirlpool would pay to LG.

Q. **The hypothetical negotiation that you were discussing, what date did you use for this hypothetical negotiation?**

A. **That's an important question here. The patents themselves issued in 2008. We saw that they launched this**

project in 2005. This poses a problem for chemists. If you are trying to simulate the real world of how they would have negotiated, nobody negotiates just before patent infringement, just before infringement of the patents, when you already have a product in the market. That's kind of like trying to get medical insurance when you are in the emergency room with a heart attack. Nobody does that.

Companies normally negotiate well ahead of time before they invest in the money, because otherwise what happens? Like we have in this case, Whirlpool has already been in the marketplace, has sold tens of thousands of these refrigerators, has made sales of tens of millions dollars. They are making these sales. The bulk of these sales are to Sears. They have long-term contracts. Now the patents issue and LG will have a holdup value. LG can come and say, look, you better pay us more than [redacted] percent, which is what we may have agreed otherwise, because we have a holdup value. You are going to lose all these sales to Sears, you are going to have representational harm because you have been advertising all these features, now you have to remove all those features.

So the question is, where would you pick? So to avoid the holdup value, because it's a willing licensee, willing licensor, I assumed that they would have based it not on a holdup but basically the way they negotiated it.

So I sort of drafted it as if it would have happened around 2005. But if you assume no holdup value and you get to 2008 when the patent was issued, it would be the same analysis. It would be exactly the numbers I have here.

MR. PARTRIDGE: Your Honor, may we have a short sidebar? I am concerned about the confidentiality issue.

THE COURT: Yes.

(The following took place at sidebar:)

MR. PARTRIDGE: I did not expect that we would belabor the slide up there and describe it in such detail. There are people in the courtroom, particularly on the LG side, diligently taking notes. I really didn't have to ask you to close the courtroom. It may be a lot of the cat is out of the bag here, unfortunately.

THE COURT: Could be.

MR. SHARMA: Your Honor, I can take the slide down now.

THE COURT: We can take the slide down.

MR. PARTRIDGE: When we had talked earlier today, I thought we were not going to belabor some of the numbers. I do appreciate that you needed to put the slide up and talk through it, but I don't know how much more of this you are going to do.

We are conscious of the fact that notes are being taken now by people --

THE COURT: I can direct that notes not be taken. But what flows into someone's head --

MR. PARTRIDGE: I understand that. Could we --

THE COURT: He says he is going to take the slide down.

MR. PARTRIDGE: Could we ask that the notes be collected or is it too much to do that?

MR. COYNE: Oh, I have a problem with that. We have some legal people inhouse here.

MR. PARTRIDGE: Not the legal people. I have no problem with the legal team.

MR. COYNE: I would object to collecting the notes.

MR. HERRMANN: I haven't looked to see if there is anybody from the press here. But how are you going to collect something from the press?

THE COURT: Not easily.

MR. PARTRIDGE: I think you are probably right. That request is probably not one that you can --

THE COURT: I think that is overreaching. I think there are limits. It's called the Constitution.

But we should be mindful of these issues on both sides because obviously these are competitors and these are sensitive matters.

So I am willing to suggest that you speak with

the parties, representatives of parties, and ask that they refrain from note-taking. You are competitors. This should not be an opportunity to try to gain a competitive advantage. Okay?

MR. PARTRIDGE: Would it be good, bad, or not -- should we say anything about -- for you to say anything before that?

THE COURT: I wouldn't want to do it in front of the jury.

MR. PARTRIDGE: I understand.

THE COURT: What is your feeling?

MR. COYNE: Your Honor, we have a very tight group here. I can talk to them all this afternoon as soon as we finish in court or at the break.

THE COURT: I also don't want to impugn anybody's integrity. I don't want to do that. And we do have some cultural differences here that may -- or sensibilities, more or less, that may -- quite frankly, I may not fully understand. So I am a little reluctant to do that.

MR. PARTRIDGE: I would be satisfied if Mr. Coyne was willing for those not on his legal team who are present in the courtroom, if he would ask them to give you their notes that they have taken on just the economic aspects of this. You don't have to show --

MR. COYNE: I am happy to do that, Your Honor.

THE COURT: I don't think that is an unreasonable request.

MR. COYNE: I am happy to do that. If we are going to have a rule that none of the non-lawyer. attendees --

THE COURT: It goes both ways. I think that is a fair request. You two can work that out. If there is a problem, there is a good way to find me.

(End of sidebar conference.)

BY MR. SHARMA:

Q. **Dr. Rao, did you consider any other factors in arriving at your royalty rate?**

A. **Yes, I did. In the context of the litigation, the Court has provided some guidance on what experts should look at. It's named after a famous case in intellectual property called Georgia-Pacific. So there are 15 Georgia-Pacific factors that one should consider. We have subsumed actually many of them in my analysis, but I will sort of briefly touch on a few.**

Factors 1 and 2 of Georgia-Pacific basically say what we are trying to figure out is what is a reasonable value. One easy way to figure that out is if there are already licenses for this technology out there between, in this case, LG and other refrigerator manufacturers, because

then that is the market value for that technology. We don't even have to do this valuation.

So I looked for those, and there are none.

Factor 2 says look for similar technologies with these parties. Again, there are none that are relevant. There are some -- four storage bins and things of that sort. But none for water-ice dispensers. Those are two factors.

Factor 8, for instance, says look at the commercial success of this particular product, customs demand for this patented feature and consumer reaction to it. And as I discussed, that's at the heart of what I did.

Factor 13, for instance, says apportion the value of the profit generated from the technology to these features, because obviously, Whirlpool sells refrigerators for lots of reasons, brand and quality and service and a whole bunch of things, relationships with customers, suppliers. We are trying to isolate the incremental value of this technology. That is what factor 13 does. I looked at that.

Factor 15 sort of brings these altogether and says essentially what would a reasonable royalty be based on the sort of willing licensee-willing licensor scenario. That is basically the gist of all of the analysis to walk through.

There are others. Again, it takes way too long

to go through them. They are generally related to the relationship between the licensee/licensor and the practice of the licensee or the licensor to license these kinds of technologies and so on.

But the essence of that is that I have taken those factors into account in arriving at my reasonable royalty rate of [redacted] percent.

Q. That reasonable royalty rate of [redacted] percent, what next did you do to arrive at a royalty damage?

A. So we just need one last step, which is, as I mentioned at the very beginning, now we have the royalty rate, we need to apply it to some base of sales. I showed you that list, sales for '8 and '9. And then the revenues. So I just need to take those revenues, apply [redacted] percent to them, and that gives me the royalty damages.

Q. Dr. Rao, if we could look very briefly at PDX-16. Is this something you prepared?

A. That is correct. So this is that last step. So from that earlier document we saw, here are the numbers for 2008 and 2009. The patent issued, I believe, on January 8 of 2008, that's why it starts there. So the first week is missing.

And then I just assumed the same sales volume and extended it for two months of this year for which we didn't have actual data. And so that's the [redacted] units.

These are the revenues based on those units. Then we applied the [redacted] percent. That basically gives a damages estimate of [redacted]

Q. **Dr. Rao, what does this translate to in terms of a dollar value per refrigerator?**

A. **That's a simple calculation. So if you take this [redacted] divide it by this approximately [redacted] or so units, you would get to a per-unit value of about [redacted] So that's just a simple division of this. My royalty rate would be approximately $34 per refrigerator, mostly the kind that we are looking at here, which are these Kenmore Elite refrigerators.**

MR. SHARMA: Thank you, Dr. Rao. No additional questions.

THE COURT: Ms. Woodall, you may cross.

MS. WOODALL: I think we may need to distribute some notebooks first.

THE COURT: You may proceed.

CROSS-EXAMINATION

BY MS. WOODALL:

Q. **Good afternoon, Dr. Rao.**

A. **Good afternoon. Good to see you again, Ms. Woodall.**

Q. **Good to see you as well.**

Your opinion in this case is that an appropriate reasonable royalty for Whirlpool's alleged infringement of

the '121 patent, the asserted claims of the '121 patent, is [redacted] percent of the refrigerator sales price. Isn't that correct?

A. **It is of the sales price to the manufacturer, not at the retail level.**

Q. **But it's on the sales price at that level of the entire refrigerator, correct?**

A. **That is correct.**

MS. WOODALL: Can we have PDX-16, please?

BY MS. WOODALL:

Q. **Now, PDX-16 is a summary of the damages calculation that you have performed in this case; is that correct?**

A. **That is correct.**

Q. **And as you noted with LG's counsel, you have started the damages period at January 8th, '08. Is that correct?**

A. **That is correct.**

Q. **And January 8th, 2008, is the date the patent issued?**

A. **That is my understanding.**

Q. **And consequently, January 8th, 2008, is the first date on which Whirlpool could have infringed LG's '121 patent, correct?**

A. **Now you are getting into legal issues. But my understanding is that's the way we would start a damages calculation.**

Q. **But you also understand, Dr. Rao, that LG cannot**

recover patent damages in this lawsuit prior to having given Whirlpool actual notice of its alleged infringement. Isn't that correct?

A. **You are getting into legal issues. Those are the kinds of things we usually take as an assumption, as direction from counsel, and we calculate damages based on that.**

Q. **Well, you have done two reports in this case, correct?**

A. **That is correct.**

Q. **And in your first report, you calculated the damages for the '121 patent starting with January 8th. Do you recall that?**

A. **I think that would be consistent with here.**

Q. **And then you served a second report, where you calculated damages from April 24th, 2008, the date on which LG gave Whirlpool actual notice of its alleged infringement. Isn't that correct?**

A. **Yes. Again, I was just simply asked to calculate from that date. What I am saying is we usually don't get into the legal issues. We are told sort of roughly the infringement period. We calculate based on that.**

Q. **I would represent to you that there have been certain comments and documents that indicate that LG acknowledges that that is the date for actual notice.**

So using April 24th as the date for the damages

period to start, we will need to change some of the numbers on PDX-16. Isn't that correct?

A. **Again, now you are asking me to assume something. If that is the case, if the damages start not from January but from April, basically you can take that column and instead of applying 12 months, you would apply 7 months to it and adjust it.**

Q. **Let's do that. If we go to the number of infringing units, for the correct time period, we would have [redacted] infringing units for the applicable time period in 2008. Correct?**

A. **I don't have a calculator, but if you are representing that you did that correctly, I take it.**

Q. **We did it in the exact same method you did, prorating for the dates.**

A. **That works for me.**

Q. **Then using a different base number is, of course, going to impact the infringing dollar sales as well. Wouldn't you agree?**

A. **Sure.**

Q. **So if we do that calculation as well, we see that the infringing sales, or allegedly infringing sales, were a little bit under [redacted] for that time period, [redacted] Do you see that?**

A. **Okay.**

Q. **Okay. And that's more than a [redacted] difference, isn't it?**

A. **Right. Because now you are looking at a much shorter period.**

Q. **So if we calculate the royalty using your royalty rate of [redacted] percent, which is, of course, different than Whirlpool's proposed royalty rate, then that number changes as well. I think we might have an error on that slide. It would actually change from [redacted] to [redacted] Would you say that is probably right?**

A. **I will take your representation. I am not doing the calculation. But I follow what you are doing.**

Q. **So your total royalty calculation for the damages period in this case would not be about [redacted]. It would be about [redacted] I think we have a math error on our corrected slide here.**

A. **Now you are making me doubt all your numbers.**

(Laughter.)

Q. **I don't do all the PowerPoints. If we were to make those corrections, we would have approximately [redacted] In damages for this time period.**

A. **Okay. I am going to go check, again, with a calculator. But I assume you did the math correctly or somebody did it for you and you assume that damages start from April, then that sounds like what I would do.**

Q. **And that [redacted] percent again is on the sales price for the refrigerator at the wholesale level, correct?**

A. **That is correct, but with a caveat. Remember, Whirlpool was forecasting it would make additional sales. And those additional sales means they would get additional profits on a whole refrigerator. Because remember, they were making [redacted] additional units that they were forecasting. So the profits are a mix of existing units plus additional units.**

So it's more like [redacted] percent of the profits on Niagara in a given year, rather than -- we calculated an implied profitability, an implied royalty rate per unit. But I want to make it more precise.

Q. **Thank you for that clarification, but the answer to my question, which is you have applied the [redacted] percent to the entire sales price of the refrigerators, would be yes?**

A. **That is correct. It is an implied rate.**

Q. **If you applied that rate to the entire refrigerator, even though the patent claims that are asserted in this case only address the extendable water spigot and only when it's spring-loaded and the extendable water tray?**

A. **I think now you are actually confused. This is how every royalty calculation works. Suppose I license five patents. And I look at the incremental value of each of those patents, let's say five different players. I**

calculate the incremental profits. Some portion of it I am willing to pay as a license fee or a royalty rate.

But by convention, the royalty rate is just translated as a rate of sales. So it's not that we are claiming the whole sale. It's just a different way to represent it.

I could say it's let's say 5 percent of profit. Usually companies don't like doing that in licensing negotiations because they don't want to reveal what the profits are, and profits can be fudged. Typically, by convention, royalty rate is just over sales. So you take 5 percent of profits, say, okay, what is it as a percent of sales. That doesn't mean you are claiming over the wholesale. It is just a way to represent it. I want to make sure you are not confusing that issue.

Q. **I don't think so. Again, you have applied the [redacted] percent royalty rate to the entire sales price for refrigerators, correct?**

A. **That is what I am saying. That's how royalties are calculated.**

Q. **Could we go to PDX-14, please?**

And this is one of the documents that LG's counsel went through with you, if you will recall. And you had calculated a base contribution margin or pre-Niagara units, as you call them. Do you see that? You had said

that the base unit contribution would have been [redacted]

A. I didn't calculate that. That's what Whirlpool calculated. That just comes from the Whirlpool forecast sheet that we looked at.

Q. Can you highlight the fourth line?

And then the post-Niagara unit contribution, that margin actually went down a little bit. It's under [redacted]

A. That's correct. That's, once again, a Whirlpool calculation. There are three ways in which you can make more profit. Either through a higher price, more profit. Lower cost, more profit. If you reduce the cost, profits can go up. Or you sell more units and you can get a higher profit. This is the version where they are selling more units, they are expecting to sell more units, that's how they are making profit. Not on individual -- not on existing units, because it turns out these ice and water dispensers are somewhat more expensive to put in rather than what people are paying, but they expect to sell more than [redacted] units. So that's how the profits go up.

Q. I think it goes down.

THE COURT: Counsel, what you think is of no moment to this jury.

MS. WOODALL: You are right, Your Honor.

BY MS. WOODALL:

Q. **You would agree it is appropriate to use the contribution margin, though, in calculating a reasonable royalty?**

A. **I just want to be clear. The general answer is no, it depends. And it depends on how you get into profits. Suppose you expect that because you are paying, let's say, a royalty rate, and it's expensive to implement whatever, whatever it is, that technology is. So maybe you are making a little less on profit per unit. But you expect to sell ten times more T-shirts or 20 times more T-shirts. So even though your contribution margin has come down, just like here, but now you are making a lot more sales, since you are going to make profits on those additional T-shirts, that is exactly what is happening here.**

By the way, these are all Whirlpool's calculations. I am just simply using their forecast, their calculations to come to the value. But these are not numbers I made up. These are estimates from Whirlpool that were prepared as part of its normal course of business.

Q. **My question is a little bit simpler. You have used Whirlpool's contribution margin in calculating your reasonable royalty, have you not?**

A. **That is correct.**

Q. **Then if we go down below the last bold line, we have estimated value of patented features at [redacted] percent,**

correct?

A. That is correct.

Q. Then in parentheses it says, "assuming entire value of Niagara from the patent." Do you see that?

A. Actually, now that I read it, that's poorly worded. Assuming entire value of Niagara is from the features. I don't mean -- so I then apportion it for the patent. That's just poorly worded. I apologize for that. In fact, it should stop at "assuming entire value of Niagara," and just stop there. It's just poorly worded.

Q. Then we go down to the 75 percent, the value of the allegedly infringing features within Niagara, right?

A. That is correct.

Q. And so the calculation you did earlier was that 75 percent of the [redacted] percent is how you arrived at the [redacted] percent. Is that right?

A. That is correct.

Q. Okay. And we see here that in connection with the 75 percent, you have a footnote to your report at tab 15(c). That's where you get the 75 percent, correct?

A. That is correct. There is an updated tab to that.

Q. This is referring to your September 4th report. Let's go to that. And you have a copy of your report in the binder that you were given, if you would like to refer to it. That is your tab and you might be familiar with it

already. Can we go to tab 15(c)?

Now, just a little while ago you told the jury that in your opinion the spigot was driving the entire value of the infringing features of Niagara. Isn't that correct?

A. **That's not what I said. I said that's a key driver of value, among these four features of product Niagara. That is the one that provides a solution. The reason that they implemented Project Niagara is to be able to fill larger containers. Without the spigot, the other ones would not be as useful to be able to do that.**

Q. **But originally, when you served your expert report in this case and signed your name to it after having reviewed it, you had assigned 25 percent value to each of four features that you called key. Correct?**

A. **Actually, that's not quite correct. As we discussed extensively at my deposition, this was a mistake. This was a typo.**

I sent you an updated tab 15(c), which, of course, you are ignoring and going with the original one. I told you this was a typo, that I did not approve to put that in there. But it accidentally got in there because there were a lot of tabs to the report. But then I sent you an updated one and I gave you my analysis.

Q. **But on the slide that you are using here in court today you referenced the original. That's why I am using**

it.
A. I meant the updated tab 15(c).
Q. So if we look at what you originally did, that at least at one point had been your opinion or it would never have been created. Correct?
A. As I said, it was one that I had changed this tab because there are a number of just simply English mistakes on here. And, unfortunately, this got through in the report to the Court. As I said, I sent an updated report. I discussed this in my deposition.
Q. Are you saying it was replaced because of English problems?
A. No. What I am saying, this whole tab, the corrections I made to it did not get into the report, the first report I sent you. Therefore, we discussed it at my deposition, I sent you an updated one.
Q. You have chosen to assign values to the four features, setting these particular numbers aside for the moment, the four features that you have assigned values to, you didn't get those numbers from any Whirlpool documents saying this feature is 25 percent, this feature is 25 percent, did you?
A. That's correct. In fact, I was looking for that, because that would be in some ways probably the most straightforward way to do it. But I couldn't find that. So I had to assign it myself. I had to allocate the value

among those four features.

Q. So the values that you used represent your judgment as to what the values for each feature within Niagara were based on your review of the documents?

A. That is correct, based on my review and my analysis of the Whirlpool documents and what I understand about these features, that is my allocation.

Q. So those would be subject to a judgment call, depending on an individual expert's analysis of the documents?

A. At some broad level, that is fair enough. That is an expert opinion. But obviously, it's based on a specific type of document and analysis. So it has to be credible within that context.

Q. You understand that fast-fill is not a patented feature in this case?

A. That is correct. As I said, that is the first thing I corrected on this slide. Fast-fill is not a feature. It is a feature that is enhanced by the spigot, but it's obviously not an infringing feature.

Q. Okay. Why don't we go to your updated tab 15(c). The other one like this with a slightly different...

MS. WOODALL: Could I have just a moment, Your Honor?

THE COURT: Sure.

(Pause.)

BY MS. WOODALL:

Q. **So is this a copy of that updated tab 15(c) that you created after your deposition in this case?**

A. **That is correct.**

Q. **Okay. And again, we see that you have bundled the tray and the water spigot together, and now you have assigned 75 percent to those two features as opposed to 25-25 from your prior version?**

A. **That's correct. The buckets have not changed. They remain the same. As I said, the first one just simply had typos. One of my analysts created it, I corrected it, sent it back to her to put it in the report before it went out. That just didn't get put in. But the buckets are the same, so my analysis has not changed. Just the tab has been updated.**

Q. **Okay. But when you revised it, you put fast-fill under a noninfringing feature, right?**

A. **Exactly. I mean, it should always have been there. It was never my intention to do it otherwise.**

Q. **Really, if we look at this, and we have got noninfringing features and infringing features, another way that somebody else might evaluate this would be that there is a 50-50 split between the infringing features and the noninfringing?**

A. **That would not make any sense in this context, because as I mentioned, the Kenmore refrigerators, in fact, this particular one, you can go and check, it has no fast-fill. That is more than half the sales, this one particular refrigerator model, that has no fast-fill. If you were to allocate 50-50, now you are giving value to a feature that doesn't even exist in the refrigerators and is not advertised in the refrigerators. And I have checked the manuals for these refrigerators.**

Q. **You understand in this case as well that there is a distinction to be drawn between a spigot, water spigot that is mechanically operated and one that is manually operated. Correct?**

A. **That is my understanding from the testimony today, and perhaps yesterday. But as I said, I only calculated it on the automatic spigots, not on the manual. Only of the kind that are on the right. The stainless steel, not the Whirlpool model.**

Q. **So in allocating value to the extendable water spigot, you have not attempted to segregate the value of one that is spring-loaded versus one that is manual?**

A. **I am not sure I understand. I am only calculating damages on what you are calling the spring-loaded and what I am calling the automatic. I am not calculating any damages on -- what did you call the other one? The manual. I am**

not calculating any damages on that, so there is no reason to allocate because all the damages are coming solely from the automatic.

Q. But you have not done any analysis to determine what value there was of a spring-loaded water spigot versus a manual water spigot?

A. Okay. In the first instance, the answer is that is not quite right, because the first thing is that I have only calculated on the automatic. But remember, these automatic ones, almost all of them, they are the Kenmore brand, with one exception of the Whirlpool brand. So they are all going to Sears. It appears that Kenmore only has automatic. It has no manual spigots. So for whatever reason, Sears only seems to want automatic. And that's what I calculated the damages on.

Q. You have also included Whirlpool models in your damages calculations?

A. There is only one Whirlpool model, which is the one that Whirlpool identified as having an automatic spigot.

Q. At the time that you created tab 15, both your original and then your later corrected one, you had not made a distinction in your damages calculation between automatic spigots or spring-loaded spigots and manual spigots. Isn't that true?

A. That is correct. At that time, the list that you

provided, because, remember, it's coming from a list of accused products that Whirlpool provided, you did not make the distinction. So I basically took -- I understand at that time all spigots were in the damages analysis. So I took that. Then you provided an updated list. Then I just cut it based on just the updated list to automatic spigots.

Q. **Right, exactly. So originally, your analysis was with regard to manual and spring-loaded spigots. And that's how you did your allocation. But when that list changed and the only ones that were at issue were spring-loaded, you didn't do anything to take that into account here on your valuation of the allegedly infringing features?**

A. **I did not change it. Except now fast-fill largely just becomes moot, because it's not a feature, except on that one Whirlpool model, which is 10 percent or so of the value of the total damage. But other than that, fast-fill is no longer an issue.**

Q. **Are you aware that fast-fill is, in fact, in the French-door bottom-mount and continues to be sold, and that it was deemed or called fast-fill at the time it was launched simply as a comparison to what had come before?**

A. **I am sorry. Which one are you talking about?**

Q. **You keep saying that fast-fill has been abandoned. I am just asking you if you are aware that the term "fast-fill" was used for comparison to what had come before.**

But that standard -- that feature is now standardized in all of the dispensers and so is not called out for comparative purposes anymore.

A. **That is not quite right. In fact, I think it is exactly the opposite of what my research showed.**

If you go to Whirlpool's refrigerators, they advertise fast-fill for the ones that have them. There is one refrigerator that was launched in 2009, where I did not see fast-fill in the advertisement. And we discussed this at my deposition. You said, well, you know, don't you know that they still have the feature.

So I went and checked the manual. And the manual has no feature, either. Because it's one thing not to advertise it for the moment. But that's interesting, because you typically don't advertise features that don't get you any additional sales; otherwise, you want to indicate them to the customer.

In this case I went to the manual for that exact model that doesn't have fast-fill. Moreover, the comparison companies make is not with their old products. It is with their other products. For instance, if all Volvo cars are safer than let's say anybody else, Volvo still advertises it's safer, not because it's -- this car today is no safer than the one of yesterday, but rather it wants to show its cars are safer than a Lexus or BMW or whoever it wants to

compete with.

So if fast-fill is, in fact, a valuable feature to consumers, then you would expect Whirlpool to advertise it, even if it's no faster than its previous model, because others don't have fast-fill. That is the point I am trying to make. It is exactly the opposite of the conclusion I think you drew.

Q. **That is on the assumption that it does not actually fill twice as fast like the ones with which it was advertised initially?**

A. **That is not true. I think you just mischaracterized what I said.**

First I looked at the manual. It's not there. Some of the other manuals will tell the customer there is a 2X button. So you press that button and get the fast-fill. In this case, they don't have that feature. And they don't have an explanation.

But secondarily, as I said, as a chemist, what I would expect is that you are trying to differentiate your products that compare to competitors, not compared to your old products only.

So therefore, it doesn't matter what others -- Whirlpool's older products were. If that is a distinguishing feature of value to consumers, you would still advertise it.

Q. **Okay.**

MS. WOODALL: Your Honor, may I approach the refrigerators?

THE COURT: Yes.

BY MS. WOODALL:

Q. **Can you see me over here?**

A. **I can see your head but not anything else.**

Q. **You understand that the Niagara dispenser refers to this entire box of a bunch of features and attributes, don't you?**

A. **That is my understanding. It refers to an ice and water dispenser of which Whirlpool itself identifies there are four key features within the Niagara 1 project. As I said, Niagara 2, which launched later, also has external controls and the LED displays and things like that.**

Q. **But Niagara 2 had launched around the same time as the patent at issue here?**

A. **They launched in 2007, that's correct.**

Q. **And if we just assume for the moment that both of these have fast-fill, we may have a disagreement there, but let's just assume that for the moment. We also know that these refrigerators have what's called measure fill that was talked about earlier, right? And you took that into account?**

A. **Yes, I did.**

Q. **That is a noninfringing feature?**

A. **That is correct.**

Q. **This one, also, it's similar, the Niagara is the entire box here and it's the dispenser. Correct?**

A. **That is correct.**

THE COURT: By "this one," counsel, you mean?

MS. WOODALL: PTX-552.

BY MS. WOODALL:

Q. **And both of the refrigerators here, PTX-552 and DPX26, they have what's referred to as a taller and wider dispenser cavity as well, don't they?**

A. **That's correct. Now, once you get into the concept that you are going to fill larger containers, which again, as I said, is made possible, the feature that solves that problem is the spigot, you are also obviously going to increase the size of the cavity. These are all features that go together, because the goal is to fill the bigger pots.**

Q. **Right. The taller, wider cavity is not part of the patent, is it?**

A. **That's correct. It's just a simple consequence of putting those other features in.**

Q. **Okay. And PTX-552 has the spring-loaded extendable water arm. Do you see it come out? Have you seen it?**

A. **Yes. I have tested that. It has a very smooth arm**

that comes out.

Q. **And DPX26 doesn't have a spring?**

A. **That's my understanding.**

Q. **Okay. And no refrigerators that do not have a spring-loaded water arm are accused of infringement. Isn't that correct?**

A. **Could you repeat that question?**

Q. **You understand that LG has offered no opinion regarding infringement of refrigerators that do not have a spring-loaded water spigot?**

A. **Are you referring to Dr. Bessler's testimony earlier? Those are not reports I have read. I don't know exactly what the infringement story is. As I said, economists and financial experts usually are asked to assume infringement because damages only come into play if you find infringement; otherwise, there are no damages.**

So we don't usually get into the infringement issues as to which ones do and do not, other than take the list of accused products in this case that Whirlpool provided for the '121 patent.

Q. **And in this case that's just ones with the spring-loaded spigot?**

A. **That's the list that I received from Whirlpool, and that's what I calculated damages on, which is what I am calling the automatic spigots. I am not calculating any**

damages on the manual.

Q. And looking at the two refrigerators, the one, DPX26 and PTX-552, isn't it fair to say that with respect to the manual spigot, DPX26, that the extendable tray really has no value independent of the spigot?

A. Could you repeat that question?

Q. It was possibly a bad question.

If only refrigerators with a spring-loaded water spigot are accused of infringement, then how could the extendable tray, which exists in a noninfringing form, have any value apart from the spigot?

A. I just want to make sure I understand you correctly. You are saying, is there value to the tray on the right-hand side, which is a stainless steel refrigerator, that is independent of what's there on the left-hand side, which is the manual refrigerator.

Q. Or independent of the spigot, because in one configuration it infringes and in the other -- or is alleged to infringe and in the other it doesn't.

A. Well, recall, that is why I said I did not separate out value between the spigot and the tray. Spigot is really the driving feature that makes all of this other stuff really possible in that commercially viable way. That's why I did not attach a separate value to the tray. In fact, I showed documents where consumers prefer the spigot and the

tray together as the main feature.

And if you didn't have the spigot, you probably wouldn't have much of a need for the tray. Similarly, you may not have a need for the other features. For instance, measure fill those documents show is the least preferred feature. And typically, for measure fill you need larger containers. You don't need measure fill typically when you are filling a cup or something. In fact, on the Kenmore models, the typical measure fill is larger than what you would typically use for a coffee cup. So you need to put a bigger pot there.

Q. **Let's take a look at DX-700. If we could just show the first page first.**

This is a 2007 document, still before the '121 patent issued. If we turn to I guess it's the last page, it's page 41 of this exhibit. We see where Trade Partners were interviewed. If we blow up the value, these are specifically ice-and-water-feature values, we see that the Trade Partners, Whirlpool's Trade Partners listed a number of features, and fill speed was the sixth on the list. And that's one of the things you have taken into consideration. That would be like fast-fill. And then below that we have dispenser height, that was ranked. Do you see those two?

A. **Yes, I do.**

Q. **Then if we keep going down, we see that the cavity**

size -- I am sorry, that repeats that. We see that we have measure fill, a few lines down, and again, that's a noninfringing feature, correct?

A. **That is correct.**

Q. **Then underneath that we have a rotating faucet, which would be the extendable water arm, correct?**

A. **That is correct.**

Q. **And we have two more down, getting close to the bottom here, the slide-out tray. Do you see that?**

A. **I see.**

Q. **The only patented features in this case are the rotating faucet. And then only when it's spring-loaded and the slide-out tray. Isn't that correct?**

A. **I think you misinterpret this particular document.**

Q. **That's not my question. You can be asked that on redirect. We are tight on time. Could you please answer my question?**

A. **The only one that I understand that is accused -- I am sorry. The features of the '121 patent are the rotating spigot and the extendable tray with the drive mechanism.**

Q. **I think you may have reversed those. Extendable tray is just manual and the spigot is mechanical-drive driven, right?**

A. **Well, I don't recall what I said. Whatever it is, I meant to say the rotating spigot, extendable tray, with the**

mechanical drive. I thought that's what I said.

Q. **I may have misheard you, I am sorry.**

Then we see there are a number of other ice and water dispenser features that Whirlpool's Trade Partners said in 2007 were important. We have got at the top of the list the in-door-ice, we have got a nightlight, which is also included on the Niagara suite of features. We have a dispenser lock, which is on the suite of features. And a number of other things, the different types of touch buttons, et cetera. Right?

A. **If you keep misinterpreting these documents, whatever you are saying, I mean, it's whatever it is, but the point is, it says -- the top of the document says "value versus cost." They are not talking about the relative importance of these features to customers. They are just simply talking about what is the perceived value to the cost.**

For instance, the nightlight may not cost very much in a refrigerator with a nightlight and without a nightlight. That may not have a meaningful price difference. But it is a feature, so you're getting a lot of value, paying little cost. Whereas something like the other features, you are paying a pretty high price. And then the question is what is the relative value to that. And it is showing that there is value, but just the price is higher.

Q. **Why don't we look and see what the Trade Partners**

actually said.

THE COURT: Counsel, why don't we take an afternoon break.

(Jury leaves courtroom at 3:30 p.m.)

(Recess taken.)

THE COURT: Okay. Ms. Walker, will you bring in the jury, please?

MR. PARTRIDGE: Judge, there may be motions after this. This is their last witness.

THE COURT: I will be right back.

(Jury enters courtroom at 3:50 p.m.)

THE COURT: Please take your seats, ladies and gentlemen.

BY MS. WOODALL:

Q. **Dr. Rao, I would like to go back to DX-700 and take a look at what Trade Partners told Whirlpool. "My sense is that the response to measure fill, slide-out, and rotating faucet is not overwhelmingly great. I'm not hearing consumers coming in and asking for it on our floor."**

Do you understand that is a Trade Partner comment to Whirlpool in 2007 before the issuance of the LG patent?

A. **That's correct.**

Q. **I would like to move back to PDX-14 for a moment. This is your reasonable royalty calculation where you have**

inserted 75 percent of the value of Niagara's attributable to the claims at issue from the '121 patent. I wanted to highlight, if the jury were to find that only 25 percent of the value of Niagara is attributable to the spring-loaded extendable water spigot and the pull-out tray, we would end up with a reasonable royalty of approximately [redacted] percent. Isn't that right?

A. **If you are purely asking, under that assumption, I mean, that's a math exercise. But for all the reasons we discussed, that is not consistent with the evidence in this case.**

Q. **But ultimately, the jury is going to have the chance to evaluate that, correct?**

A. **Absolutely.**

Q. **And then let's go to PDX-16. If the jury were to conclude that the value of the patented features of Niagara, just the spring-loaded extendable water spigot and the extendable tray, were only worth 25 percent of the value of Niagara and we got the 1 percent royalty rate, then the damages for Whirlpool's alleged infringement would be less than [redacted] Isn't that correct?**

A. **Once again, with all the assumptions that you are making, and assume for the moment that the math is correct, that would be correct.**

Q. **I note that we corrected our math errors here on this**

one and show the correct numbers.

If the jury were to decide it's less than 1 percent, they have that ability as well, correct?

A. **I mean, they are ultimately the jury, so it's whatever they -- obviously the conclusion that they reach is the most important. I can only provide assistance based on my review of the documents and my analysis.**

MS. WOODALL: Thank you, Dr. Rao. No further questions.

THE COURT: Mr. Sharma.

MR. SHARMA: Your Honor, no questions.

THE COURT: Doctor, you are excused.

THE WITNESS: Thank you.

(Witness excused.)

MR. COYNE: Your Honor, at this time LG rests its direct case on the '121 patent.

THE COURT: Let me see counsel briefly at sidebar.

(The following took place at sidebar:)

THE COURT: You were trying to say something.

MR. PARTRIDGE: I apologize, Your Honor. I shouldn't have done that. Just that we would have motions. The reason I did that was because you were about to bring the jury out. And I wanted you to know we might be doing this back-and-forth business.

THE COURT: It is no surprise.

The question is, let's assume for a moment that I am either going to deny or reserve, from the standpoint of witnesses, we have about 35 minutes left in the day. Can we make good use of that time?

MR. PARTRIDGE: Yes, we can. What we could do, if you would like, is just put on our first witness, which would probably take most of that time.

MR. COTTRELL: Your Honor, I think 20 minutes on direct.

MR. PARTRIDGE: That will complete the day, then we can do the motions.

THE COURT: Let's do that. We can get the jury out. We will leave the record open for that purpose. I will take the JMOL motions as if we had done them right at the conclusion of the plaintiffs' evidence. I think the Fed Circuit will let me do that still.

(End of sidebar conference.)

THE COURT: Mr. Cottrell, you have the first witness.

MR. COTTRELL: Yes, Your Honor. Thank you. Whirlpool calls Tom Catania.

... Thomas Catania, Jr, having been duly sworn as a witness, was examined and testified as follows ...

MR. COTTRELL: Ladies and gentlemen, my name is

Fred Cottrell. I am an attorney here in Wilmington. I am one of the attorneys here for Whirlpool.

As my colleague, Mr. Partridge, reminded you in the opening, there will come a time for Whirlpool to put on its patents, its people, and its products. Now is that time. Our first witness is Mr. Tom Catania who will talk a little about the history and the innovations at Whirlpool.

DIRECT EXAMINATION

BY MR. COTTRELL:

Q. **Good afternoon, Mr. Catania.**

A. **Good afternoon.**

Q. **Can you tell us about yourself, please?**

A. **I grew up in this part of the country. Actually, in the Bronx, in New York, is where I spent my childhood. My family moved around. Eventually, by the time I got to high school, I was living in Minnesota. I went to college at the University of Minnesota, where I met my wife. And we are now the proud parents of two college-age daughters.**

I live currently at our corporate headquarters in southwestern Michigan, a little town called Benton Harbor. It's right across the lake from Chicago.

Q. **Give us after high school your education.**

A. **I went to the University of Minnesota for my undergraduate degree. I was a political science major. And then I went to law school in St. Paul, Minnesota, William**

Winchell College of Law Enforcement. That is my education beyond that.

Q. **After you graduated law school, what did you do?**

A. **My first job as an attorney, I was a law clerk for the Minnesota Supreme Court. That is a one-year assignment. And then I began my first job, I was Assistant Attorney General for the state of Minnesota. I represented the people in the state of Minnesota. I was primarily an antitrust prosecutor, but I also did work in the criminal and consumer protection divisions.**

Q. **When did you start at Whirlpool?**

A. **I started at Whirlpool a little over 23 years ago, in 1986.**

Q. **And you have been there continuously?**

A. **Yes.**

Q. **And what is your current job at Whirlpool?**

A. **I started at Whirlpool -- my first ten years were in the law department. And then in 1997 I became vice president of government relations.**

Q. **And what does that job entail, what do you do day-to-day?**

A. **I am primarily responsible for interface between our company and the government, at all levels and globally.**

I should add, I also have the responsibility for interaction with trade associations, the most significant

one being the Association of Home Appliance Manufacturers, which is our industry trade association.

But I also have represented our company before broader business associations, like the National Association of Manufacturers and the Chamber of Commerce and so forth.

Q. That one trade group that you mentioned, the Association of --

A. Home Appliance Manufacturers, yes.

Q. Is LG a member of that, too?

A. Yes, they are. I know Mr. Taylor from our mutual involvement with that group.

Q. And have you been a witness at trial before, Mr. Catania?

A. No, I have not.

Q. Mr. Catania, I have given you some slides. I would like to put the first up, if I could, slide 2. I am going to ask you some questions about the history of the Whirlpool company. As all things, let's start at the beginning, about a hundred years ago.

A. I promise you I won't take you through all hundred years.

We are about to celebrate our hundredth adversary next year. It is something our company is very proud of. It is interesting that this is a patent matter, because Whirlpool Corporation was really built on a patent.

Lou Upton is one of the two brothers that founded the company. He had a business venture that, frankly, failed. And he was asked what assets he wanted out of that venture. And the only asset that he thought was worth anything was a washing machine patent.

So he brought that back to Michigan. And with his brother and his uncle, they used this washing machine patent to create a motorized wringer washer. You use to have to crank them by hand. You see the picture there. He thought he could add a motor to it.

So Whirlpool was really built and started on that initial washing machine patent.

The next important event in the company's history happened just before the Great Depression, unfortunately. There was a merger with a company that was based in New York called the Nineteen Hundred Corporation.

But despite the very difficult economic times that the country was experiencing, they were able to keep their company together and continue to grow it. And the company began to be an extensive manufacturer, a pretty successful one.

So when the country entered World War II, we were asked to contribute to the war effort, as many companies were at the time. And we began using our manufacturing facilities to aid in the war effort. We were

even making airplanes at at least one of our factories that I am aware of.

Q. **Mr. Catania, let me take you forward a little bit to the layout 1940s-1950. If you could continue to talk about washing machines and a bit about Sears.**

A. **Yes. Whirlpool Corporation for almost its first 50 years of its history was basically an original equipment manufacturer for Sears under their Sears brand name. It was primarily a washing machine company. But as we continued to expand our relationship with Sears, we realized that we needed to be a broader company. We needed to have more products to fill out the home and the kitchen.**

So the company began to use the name Whirlpool, and in 1955 the company expanded to a full line of appliances. One of the most important additions was refrigeration, a company called Seeger had these other products.

1955 was of special importance to me. It was the year I was born. I had a birthday around the time that I joined Whirlpool. And they print out these little publications that list things that happened on your birthday.

Amazingly, Whirlpool's announcement of its full line of appliances was one of two business headlines on my birthday.

Q. **So you were destined to work for Whirlpool?**

A. **I guess we are stuck with each other.**

Q. **Let me go back just briefly. You may have covered this, and I apologize.**

There came a time where Whirlpool became known as Whirlpool. That was in about 1950?

A. **Well, we had the brand name Whirlpool. I think it came actually from the Nineteen Hundred Corporation. But it really wasn't used because we were primarily trying to serve our Sears customer. And frankly, we sort of asked permission from our customer to begin to expand our own brand. And that did happen in the fifties.**

Q. **Let's jump forward, Mr. Catania, to the 1980s. Can you talk about the sort of next evolution at Whirlpool?**

A. **Yes. A couple of important things happened in the '80s. We began to expand our line and we began to expand our brands.**

No matter how good your products are, consumers do have an association with certain brands. For instance, for us the acquisition in the mid-1980's of the Kitchen Aid brand brought us a premium association, a brand that meant premium in the minds of the consumer that was important to us.

The other thing that happened that was transformational for our company was at the end of the 1980s

we began to significantly expand internationally. And so the company acquired a European company, N.V. Phillips appliance business, in late 1989. And we also began to expand in other countries, Mexico, Indonesia, China, and so forth.

Q. **Let's jump forward to a few years ago. Maytag has come up in this case already. Can you talk about the relationship of Whirlpool and Maytag?**

A. **Yes. In 2006, obviously, we did acquire the Maytag Corporation. It was an interesting experience for our company in the sense that our cultures are very similar. But, of course, for much of my history with the company, Maytag was an important competitor of ours. So it took a little while to get used to thinking of the Maytag man as part of us.**

But it's been a very smooth merger, I think. And now it's added some additional valuable brands to our portfolio.

Q. **What are a couple of those brands from Maytag?**

A. **With Maytag, in addition to the Maytag brand, the Jenn-Air brand, and also, you see them up here, the Amana brand, which they had previously acquired. I think you heard about that in earlier testimony.**

Q. **Here we are a hundred years later and Whirlpool still has operations in Benton Harbor?**

A. **We do. And we have had the good fortune to grow from this small town in Benton Harbor to now become the largest home appliance manufacturer in the world. So we compete with all of our global competitors everywhere in the world.**

Q. **Let's talk about that just for a second.**

Does Whirlpool have a presence in most countries around the world?

A. **I believe we sell our products in 170 different countries. And we manufacture in many, many countries as well.**

Q. **And just roughly, how many employees around the world?**

A. **I believe that we have 67,000 employees.**

Q. **Let's talk a little bit about Whirlpool in the United States. Approximately how many facilities does Whirlpool have in the United States?**

A. **We have at least 10, a mixture of manufacturing facilities, as well as engineering and technology centers, physical distribution centers, call centers. I would say the majority of our 17,000 employees in the United States work in our factories. But we do also have hundreds of engineers throughout the country.**

Q. **Do we also have a facility in Mexico?**

A. **We do. In the late 1980s, we did acquire a failing operation in Mexico. I think GE and Whirlpool at about the same time acquired operations in Mexico.**

Q. **The next slide is up. These are some brands manufactured by Whirlpool. Can you tell us which of these involve refrigerators?**

A. **I believe, of course, the Kenmore brand is Sears brand. We did manufacture products for a long time for them under the Kenmore brand. It really was the foundation of our company.**

These other brands, though, also are used on refrigerators, including -- people may not be as familiar with the Gladiator brand. It is storage systems design for the garage. But we also have some appliances with that same design, including the refrigerator for the garage.

Q. **And the refrigerator business is important for Whirlpool, is it not?**

A. **I would say it's a third of our total sales. It's probably one of the most global products among all the appliances. In some countries, for example, you won't see clothes dryers sold for a variety of reasons. But almost everywhere you will see demand for some form of refrigeration.**

Q. **You talked about the Kenmore brand. If we could please go to the next slide. The Kenmore brand is sold by Sears?**

A. **That's right.**

Q. **Can you tell us what's on this slide?**

A. **Well, this would represent, of our total global sales, the average over the last few years of the percentage of those revenues coming from Sears and the Kenmore brand.**

So I would say what this slide really represents is not that Sears is not an unimportant customer to us, it is a very important customer, we sell not only Kenmore brand, but we sell our own branded products through Sears. But it does reflect the sheer size of the company as we have grown globally.

Q. **Let me ask you a few questions about innovation and research and development at Whirlpool. How does Whirlpool compete with others in the appliance industry?**

A. **Well, I think you have heard the word "innovation" used a lot. As the leader in our industry, we probably started using that as a core business strategy maybe earlier than some others. Being able to develop what we would refer to as consumer-relevant innovations is a critical part of our whole business strategy.**

That means that it's not just a good idea. It's got to be an idea that matters to consumers. So we spend a lot of time developing what we hope is that core competency in our ability to focus resources and develop innovations that matter to the consumer.

Q. **So consumer demand can drive innovation?**

A. **Absolutely. And ultimately your brand's reputation**

depends on the consumer's evaluation of your products. We have an industry where we sell to retailers, and sometimes it's easy to get caught up in what your retailer wants from you at any given time. But long-term our success really depends on getting close to our consumers.

Q. Let's talk about just a few examples of innovation at Whirlpool, if we could go to slide 5.

Can you just give us a couple of examples from this slide?

A. Well, the first one listed there in 1949, having to do with developing a top-loading spinning style, automatic washing machine and electric dryer, that is, again, Whirlpool's heritage was in the laundry room. So that was a very important initial development. I guess it was the ultimate extension of Lou Upton's original patent to start motorizing what was almost a hand-washing process a little after the turn of the century.

As early as 1977 we began to development automatic clothes washers with solid-state electronic controls. And the 1980s brought a direct-drive washing machine, which may not be self-evident what that means. But washing machines' biggest repair issues in the past had been belts breaking. So the ability to directly connect the motor to the agitator was a very important innovation, not only because of reliability, but it meant fewer parts. So

it was a very -- I remember it very well because it was soon after I had joined the company. We were still enjoying the initial enthusiasm about that.

Then the last one is when I had the opportunity to be involved with last year, we announced -- you may have heard about the smart grid a lot in the news. We announced we would be prepared to make by 2015, every appliance we make in the world, capable of receiving a signal from a utility and responding, which means we can safe a lot of energy and money for consumers, as well as improve the whole environmental friendliness of the electric grid. So it is an exciting new area for us.

Q. Of course, a lot of other things happened along this timeline which we haven't talked about. Others from Whirlpool are going to talk about what happened in the '90s in this case; is that correct?

A. That's right.

Q. Let me ask you about some recognition or achievements that Whirlpool has received recently. I am not going to go through all these. I would like to start with the second one here. The second one, the Ocean Tomo 300 patent index, can you tell us a little bit about that?

A. This index I think is just a reflection that people who evaluate companies believe that your intellectual property has a material impact on your success. So they

look at companies around the world and assign a value to the portfolio of patents as they assess them. And so among the companies in the world, we are viewed to be by this index, anyway, that I think is well-recognized, in the top 300 companies in the world.

We are competing with a lot of companies in that list that other people would maybe regard as more high-tech than ours. So we are proud to be in that list.

Q. Let me ask you about Whirlpool's receipt of the Energy Star award. What is Energy Star?

A. Energy Star is a program that the Department of Energy and the Environmental Protection Agency have inaugurated. It is called the market transformation program. It is a program that is designed to stimulate manufacturers to produce products at efficiency levels above the minimum standards, and to give consumers an easy way to identify a product that not only is more environmentally friendly but will save you money to operate.

That award is important to me and to my group because we are responsible every year for submitting the application in December. And just Monday of this week, they announced that again we have won that award 11 out of the 12 times that it has been awarded.

Q. What years has Whirlpool won that award, roughly?

A. Counting back 12 years from this year. We have won a

total of 22 of these sorts of awards. They were predecessor programs to Energy Star, such as Green Lights, where we won awards as well.

In fact, we won the partner of the year award for appliances so many times that they created a new award called the Sustained Excellence Award for people who had won in multiple years.

Q. **Again, why is Energy Star important to the consumer?**

A. **Well, it tells the consumer two things, I think -- really, three. No. 1, I think the consumer assumes that an energy-efficient product is probably a technologically advanced product. So we get some credit on that dimension.**

Secondly, I think it tells the consumer that a product is going to be better for the environment in some respect.

And third, frankly, it tells the consumer that it's going to be cheaper to own because the product will use less energy and, therefore, you will have a lower utility bill.

Q. **Let's if we could go to the last topic, the last slide. Talk a little bit about research and development at Whirlpool on this slide. Can you just summarize what's here?**

A. **Well, I think what this chart tells you is several things. First of all, it tells you that we spend a lot of**

money on research and development. In absolute dollars, in relative dollars, as opposed to other companies, that is a lot of money.

But the other thing it tells you is that we have to invest in our future even in difficult times. So you will see that 2008 would not have been a year that you would expect R&D investments to go up. It was sort of the beginning of a crisis year, frankly. The appliance industry started experiencing a recession a couple of years before the rest of America, American industry because of the housing industry declining a little quicker than other sectors.

As you can see, despite the economic difficulties, we felt we had to continue to invest in our future, which we have been doing.

Q. **Of the facilities you mentioned that Whirlpool operates in the United States, which ones are designed or involved with research and development?**

A. **Well, we have technology centers of competence throughout the United States. In the refrigeration area, we have them in Iowa, as well as our headquarters in Michigan.**

Q. **I would assume they employ a fair number of folks and engineers?**

A. **It would be hundreds of engineers, yes.**

MR. COTTRELL: Thank you, Mr. Catania. That's

all I have.

THE COURT: Mr. Coyne.

CROSS-EXAMINATION

BY MR. COYNE:

Q. Good afternoon, Mr. Catania.

A. Good afternoon.

Q. We have not met before. Hello.

A. Nice to see you.

Q. The first thing I want to ask you, some of the slides you put up, for example, one of them was, you mentioned, innovation. Would it be fair to say when a company is growing it really has two fundamental choices, build or buy? Right?

A. I think a company probably has lots of choices. I am not sure build or buy --

Q. One way to do it is to grow externally and expand, and expand your staff and continue organic growth. That's one way. Right?

A. Yes.

Q. Another way is to buy, right? Buy up competitors, for example, correct?

A. There are efforts to expand geographic markets. Sometimes those geographies are ones that we aren't in already, but others are there, yes, that's right.

Q. Let's look at these brands because many of these are

well-known in the geography of the United States, right?

A. **Yes.**

Q. **The Kenmore brand, that is a Sears brand, right?**

A. **That's correct.**

Q. **Let's set that one aside. Maytag, that was a brand that Whirlpool bought, right?**

A. **We bought the entire company. The brand was one of the assets.**

Q. **The Amana company is a company that was acquired through the Maytag acquisition as well, right?**

A. **That's a company that Maytag had acquired before we bought Maytag.**

Q. **And when you bought Maytag, you acquired them, too, didn't you?**

A. **Maytag had already acquired it.**

Q. **How about the Jenn-Air brand, was that a brand that Whirlpool bought or built internally?**

A. **That was a brand that Maytag had acquired before we acquired them.**

Q. **How about the Magic Chef brand, was that a brand Whirlpool built internally or bought from another company?**

A. **Magic Chef was purchased by I believe Maytag before we bought it.**

Q. **Are there any other brands on this list? That leaves the Gladiator, Estate and Kitchen Aid brand. Was Kitchen**

Aid a brand that Whirlpool built or bought?

A. **I would say we built the brand significantly since we bought it. But, yes, we did buy it.**

Q. **How about the Estate brand. Is that a brand that Whirlpool built or bought?**

A. **I am honestly uncertain. I think that brand has been part of our group as long as I have been there.**

Q. **How about Gladiator?**

A. **Gladiator I think is our brand that we developed.**

Q. **Very well. Thank you, sir.**

I would like to put up another slide that you had shown. The Pac Man. Mr. Cottrell has asked you about this. What is the implication of this? Is Whirlpool gobbling up Sears?

A. **I am sorry?**

Q. **The slide appears to be like a Pac Man gobbling up Sears. What is the implication of the graphic?**

A. **Are you asking me if we intended to design this as a Pac Man symbol?**

THE COURT: If you don't understand the question, just tell him.

THE WITNESS: I am sorry, I just don't understand.

BY MR. COYNE:

Q. **The Sears business, you said the last couple of years**

it's about 12.5 percent of Whirlpool's total business. When you went back to the early 1900's, how much of Whirlpool's business was the Sears business then?

A. I couldn't quote an exact percentage, but I am sure it was the vast majority.

Q. And Sears is a very sophisticated customer, isn't it?

A. Absolutely.

Q. And they are a demanding customer, aren't they?

A. Yes, they are.

Q. Could we go to PTX-117, please?

Before we get to that slide, let me ask you: That percentage, is it falling or rising at the present time?

A. It is hard for me to answer that question, because our other business is growing. If the growth outside the U.S. -- I can't tell if that is a bigger variable on this equation.

Q. Well, you also mentioned -- one of the things you talked about was competing in all these countries around the world. Since Whirlpool is out competing in those countries, don't you think it's fair for companies from those countries to be competing with Whirlpool here?

A. Fair competition is something we absolutely support.

Q. Let's go back to the Sears, then, PTX-117. What is this document, sir? Have you seen this before?

A. **No.**

Q. **Let's go to 187, then. This is the slide we were looking at during the opening yesterday. This is 2006, apropos my question to you about whether the business is growing or shrinking.** [redacted]

Did I read that correctly?

A. **Yes, I think you read it correctly.**

Q. **Is that the feedback your company is getting from your significant customer?**

A. **I know Tina Settecase. I have been in meetings with her. We went together to Energy Star Partner of the Year dinner. I know she very much supported the relationship with Whirlpool. I think what is missing from that slide is the branded business that we sold to Sears, which has been growing significantly during my career with Whirlpool.**

Q. **But at least with respect to whatever business she is talking about with Sears, there is some disturbing trends. Right?**

A. **I am reading the same language you are for the first time.**

Q. **Sir, let me go to another one of the slides you put up, the awards for innovation. You are aware that LG has also gotten awards for innovation, aren't you?**

A. **I am just assuming that they have. I am not aware of any specific awards they received.**

Q. **Well, one of the things you note on here is the hundred most innovative companies, world's hundred most innovative companies. Where does Whirlpool rank in that ranking?**

A. **I am sorry, I don't know precisely where.**

Q. **Let me see if I can help you out a little bit.**

Can we bring up PDX-21, please, and go to the third page of the document?

This is the list we pulled off the website just yesterday, sir, from *Business Week*. It indicates at the top, do you see No. 85, LG Electronics?

A. **Yes. Is that their electronics innovations or is that some other part of their business? I am not sure what it refers to.**

Q. **I am sorry, sir. I am just reporting what is in the *Business Week* website. Do you see No. 85 for LG Electronics?**

A. **Yes.**

Q. **Can you find Whirlpool on the list?**

A. **I can.**

Q. **Where is Whirlpool?**

A. **No. 98.**

Q. **Thank you. Can we go to PDX-22?**

MR. COTTRELL: Your Honor, I haven't seen these. I thought the protocol was I could have copies of these.

MR. COYNE: I am sorry, Your Honor. It is my oversight. I apologize to Mr. Cottrell and to the Court.

BY MR. COYNE:

Q. **This one, sir, is dated Thursday, February 25, 2010. I would like to direct your attention to the second page, the entry for No. 27.**

A. **Could you tell me again, this is from what time?**

Q. **If you look at the first page of PDX-22, this is *Business Week's* 50 most innovative companies dated Thursday, February 25. They put out a top hundred list and they put out a top 50 list. This is their top 50 list, including the 2008 and 2009 rankings. Do you see at the left?**

If we could go back to the first page so you can see the legend. If you look at the left-hand side, it indicates 2009 rank and 2008 rank?

A. **Yes.**

Q. **If you look down to the entry for No. 27, LG Electronics is indicated there, correct?**

A. **Yes. I see it says "product." Does it specify what kind of product?**

Q. **Sir, I am just reporting what is on the website. Do you see Whirlpool -- you have the list now in front of you. I apologize for not providing it to you earlier. Can you see Whirlpool listed anywhere on PDX-22 of the 50 most innovative companies?**

A. **I don't see it, no.**

Q. **The last set of questions. You put up another slide. Whirlpool invests millions of dollars in this innovation. Is this all in refrigeration?**

A. **No, it's not.**

Q. **How much of it is refrigeration?**

A. **Based on my general understanding of the breakdown in our business, I would assume that about a third of it is in refrigeration.**

Q. **But a lot less than is shown on the graph you put up, right?**

A. **I guess I will just stand by my answer of about a third.**

MR. COYNE: I have no further questions, Your Honor.

THE COURT: Anything further, Mr. Cottrell?

MR. COTTRELL: Two questions, Your Honor.

REDIRECT EXAMINATION

BY MR. COTTRELL:

Q. **Mr. Catania, the graphic Mr. Coyne referred you to as the Pac Man, that didn't mean that Whirlpool was buying Sears, did it?**

A. **No, it didn't.**

Q. **It just showed the important percentage of business Whirlpool has with Sears?**

A. **That's right. I think, as I explained, our company was built on our relationship with Sears. But we have grown since that time. So its relative size for our total business has reduced as our total business has increased.**

Q. **And the top 50 list Mr. Coyne put up on the screen, had you seen that before?**

A. **No.**

Q. **Do you have any idea what products that refers to? Does that refer to refrigerators? Does it refer to TVs?**

A. **Well, it just says "products." So I would assume that it incorporates other innovations besides the appliances.**

MR. COTTRELL: Thank you, Mr. Catania.

THE COURT: Thank you, Mr. Catania. You are excused.

(Witness excused.)

THE COURT: Members of the jury, we have come to the end of our trial day. I ask you remember the instructions I gave you at yesterday's end. Travel safely.

We will see you back here at 9:00.

(Jury leaves courtroom at 4:30 p.m.)

THE COURT: All right. You can take your seats. Are you going to handle this chore, Mr. Partridge?

MR. PARTRIDGE: Your Honor, I will do the first part.

THE COURT: You have a JMOL motion, I take it?

MR. PARTRIDGE: Yes, we would move that, as a matter of law, LG has failed to establish its case on infringement. The only evidence that was introduced that compared the claims of the '121 patent, claims 20, 21, and 36, to the accused products was that of Dr. Bessler. And in Dr. Bessler's comparison of the claims to those products, he presented no evidence with respect to any of the Whirlpool refrigerators that have the manual spigot and acknowledged that, in fact, he was offering no opinion with respect to that.

It's not a hundred percent clear to me whether, based on the damage analysis we heard, whether there are any allegations that remain with respect to it.

But to resolve any uncertainty about that, we would move as a matter of law with respect to that.

And secondly, as to the other refrigerators that have been characterized as automatic water dispenser refrigerators, he used one refrigerator as an example of the

entire set, which is the one that all of us get the wrong exhibit number for. I can't see it here.

THE COURT: PTX-552.

MR. PARTRIDGE: Yes, Your Honor.

With respect to that particular model, for at least this reason, Dr. Bessler failed to establish that the water spigot itself, not the structure on which it's mounted, but the spigot itself, which is what all three of those claims address, does not extend outside the front surface of the refrigerator.

And that is a failing with respect to all of LG's proofs here, Your Honor. It applies to all of the refrigerators, because they relied on that single refrigerator as a basis for all of their infringement allegations here.

As you will recall --

THE COURT: Let me ask you this, Mr. Partridge: On that subject, the spigot extending beyond the frame or the -- I am drawing a blank on the term of art, the surface, didn't he take issue with Mr. Morico in his efforts to get him to agree?

MR. PARTRIDGE: He said, Your Honor, that, gee, he would have to pull that thing out and make measurements to see exactly where it was, but that his observation was that maybe it was -- that's the way I heard it. They bear

the burden of proof, yes, it's not clear and convincing, it's preponderance of the evidence. That's a burden they need to satisfy in their case-in-chief.

THE COURT: True.

MR. PARTRIDGE: I would suggest to Your Honor that the testimony that we heard did not measure up to that particular standard. For that reason, that is the basis for our motion for judgment as a matter of law on the issue of infringement.

THE COURT: If he had unequivocally agreed with Mr. Morico in Mr. Morico's efforts at cross-examining him with the mockup, I might agree. But wouldn't it be better that I try not to invade the province of the fact-finder and let them draw a conclusion about that one way or the other?

MR. PARTRIDGE: Your Honor, you would be perfectly within your right to draw that conclusion, as I am here standing on my motion at the same time.

THE COURT: I understand. Do what you have to do, Mr. Partridge.

MR. PARTRIDGE: Exactly. Your Honor, we understand each other perfectly.

We do have a motion with respect to damages that we would like to make as well.

THE COURT: I am going to deny your motion. I don't need to hear from you, Mr. Coyne.

MR. PARTRIDGE: We accept that ruling, Your Honor.

I would say, as Ms. Woodall comes up to address the damages issue, that while we don't think the claim has been made across the board, there are some sort of subsets to this that I think she can address as part of our motion.

THE COURT: That is fair. Mr. Partridge, let me add, I think as to the 552, didn't he talk about a list?

MR. PARTRIDGE: He did, Your Honor. And his testimony was that he was going to treat everything on that list the same as that refrigerator, and all the testimony was then directed to that refrigerator.

THE COURT: So I think it's left to the fact-finder to determine whether he was just talking about the 552 or all of the accused products.

MR. PARTRIDGE: I understand, Your Honor.

THE COURT: I wanted to clear that up.

Yes, Ms. Woodall.

MS. WOODALL: We would also move for judgment as a matter of law on LG's damages claim in this case. We have a number of bases for this. As you heard from Dr. Rao, he has calculated his reasonable royalty as a percentage of sales of the entire refrigerator.

This is violative of the Federal Circuit's recent case law and the application of the entire market

value rule. LG has not carried its burden to show that the spigot or the extendable tray that are the subject of the claims at issue in the case are the basis of the customer demand of the entire refrigerator. While counsel for LG did attempt at times to imply a royalty rate, that appears nowhere in Dr. Rao's analysis.

His analysis was entirely percentage of sales of the entire refrigerator. So we believe their claim fails for that purpose. They have not shown that they are entitled to recover any damages that are based on use of the entire refrigerator as the royalty base.

The second point would be that we do not believe there is a fact issue with respect to the date upon which damages begin in this case. The patent issued on January 1st of 2008. But counsel for LG has indicated in one of the summary judgment letters to the Court that they implicitly acknowledge that they did not provide Whirlpool with actual notice of infringement until the complaint was filed on April 24th, 2008.

Further to that point, at no point during LG's case-in-chief did they present any evidence that they provided Whirlpool with actual notice as required by Federal Circuit precedent of their patent rights prior to the filing date of the complaint.

Our third point would be just to reurge at this

point the oral motion made yesterday with regard to the methodology used --

THE COURT: I am not going to hear you on that, counsel, at this time.

MS. WOODALL: I wanted to reserve it for the record.

THE COURT: It is reserved. The worst thing you can do with me is to beat the proverbial dead horse. It gets on the wrong side of me.

MS. WOODALL: Yes, Your Honor. Just for the record.

THE COURT: Even just for the record. Just for the record, let me say that to you again.

MS. WOODALL: Understood, Your Honor.

And those would be our bases for moving for judgment as a matter of law. We believe that the foregoing would suggest that LG has not carried its burden. While the statute does indicate that upon showing of infringement a patentee is entitled to some form of damages, the Federal Circuit has said that that does not mean that they get damages where they have not carried their burden.

THE COURT: A lot of courts have said that, counsel.

Mr. Coyne.

MR. COYNE: Thank you, Your Honor.

THE COURT: Well before the Federal Circuit was even formed, I might add.

MR. COYNE: Your Honor, I don't believe Ms. Woodall's attempt to restrict the base for the royalty -- yes, if the royalty is being applied on a unit part basis against the entire product, there is a problem with the methodology. But Dr. Rao laid out his methodology to you and the fact-finder.

There is nothing wrong with what he laid out that can't be dealt with and wasn't dealt with during cross-examination. It is a fact issue, in our view. We respectfully submit it would be improper to do what Ms. Woodall is suggesting. He does, in fact, show a basis for consumer demand. That was part of his analysis. Went through in agonizing detail and pulled right out of Whirlpool's documents the incremental demand for this product are driven by that feature. Even if we go --

THE COURT: I am going to cut you off, Mr. Coyne, because I agree with you. The Doctor clearly rejected the premise, at least two or three of the premises upon which Ms. Woodall was examining him. And there was a difference of view. It's up to the jury. It's going to be up to the jury to decide whether they accept his testimony.

So the motion is denied.

MR. COYNE: Thank you.

THE COURT: Matters for tomorrow, do we have issues we need to discuss?

MR. PARTRIDGE: I am not aware of any, Your Honor. We do appreciate that you allow us to come in at 8:30. If we have something, we will be here and we will try not to burden you with anything that is not necessary for the day.

THE COURT: I operate under the assumption that stuff is going to happen overnight. So I try to get in here in time so that I can hear you at 8:30 and we don't delay the jury.

So I will be here. We will recess. Good evening.

(Court recessed.)