

NESPRESSO USA, INC.) Case: IPR2023-00502
) U.S. Patent No. 10,994,923
 Petitioner,)
) -and-
 v.)
) Case: IPR2023-00485
 K-FEE SYSTEM GMBH,) U.S. Patent No. 11,230,430
)
 Patent Owner.)
 -----)

DEPOSITION OF LAURENS HOWLE, PH.D.
THURSDAY, FEBRUARY 22, 2024

REPORTED BY NANCY J. MARTIN
CSR. NO. 9504, RMR, RPR

NESPRESSO USA, INC.) Case: IPR2023-00502
) U.S. Patent No. 10,994,923
 Petitioner,)
)-and-
 v.)
) Case: IPR2023-00485
 K-FEE SYSTEM GMBH,) U.S. Patent No. 11,230,430
)
 Patent Owner.)
 -----)

— — —

Thursday, February 22, 2024

— — —

Deposition of LAURENS HOWLE, PH.D.,
beginning at 9:22 a.m., before Nancy J. Martin, a
Registered Merit Reporter, Certified Shorthand
Reporter.

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I N D E X

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1 RALEIGH, NORTH CAROLINA, THURSDAY, FEBRUARY 22, 2024;

2 9:22 A.M.

3 -OoO-

4 LAURENS HOWLE, PH.D.,

5 having been sworn/affirmed,

6 was examined and testified as follows:

7
8 EXAMINATION

9 BY MR. MCCRAW:

10 Q. Good morning.

11 Please state your name for the record.

12 A. Good morning. My name is Laurens Edward
13 Howle.

14 Q. And Dr. Howle, you understand you're under
15 oath today?

16 A. Yes, I understand that.

17 Q. Is there anything that would prevent you from
18 providing complete and truthful testimony today?

19 A. No.

20 Q. Dr. Howle, I'm Clayton McCraw, counsel for
21 Nespresso, the petitioner in these IPRs.

22 We've met before; correct?

23 A. Yes. That's right.

24 Q. You understand today's deposition deals with
25 two IPR proceedings?

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1 A. That is my understanding, yes.

2 Q. One of which is IPR2023-00502, which pertains
3 to U.S. Patent No. 10,994,923; is that correct?

4 A. Correct. Yes.

5 Q. And the other is IPR proceeding 2023-00485,
6 which pertains to U.S. Patent No. 11,230,430; is that
7 correct?

8 A. Yes.

9 Q. And you were previously deposed in an IPR
10 proceeding between Nespresso and K-Fee; is that right?

11 A. Yes, I was.

12 Q. And that took place in September of 2023;
13 correct?

14 A. Sounds about right.

15 Q. Have you been deposed in any other matters
16 since September of 2023?

17 A. I don't believe so.

18 Q. Is that a "no"?

19 A. To the best of my knowledge, that's a no. I
20 don't recall, I guess.

21 Q. Have you provided any trial testimony since
22 September of 2023?

23 A. By that, do you mean testify at trial or
24 provide reports, for example?

25 Q. Let's start with the first one. Testifying
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1 at trial.

2 A. I have not testified at trial since
3 September, no.

4 Q. And what matters were those in connection
5 with?

6 A. That was Graco V Harbor Freight. That has to
7 do with paint sprayers.

8 Q. Do you know where that action is pending?

9 A. Not off the top of my head. I'm sorry.

10 Q. And who do you represent in that proceeding?

11 A. Harbor Freight.

12 Q. And what type of dispute is that matter?

13 A. That is, at present, an IPR.

14 Q. You represent the patent owner in that IPR;
15 is that correct?

16 A. No, sir. The other side.

17 Q. The petitioner?

18 A. Yes, sir. I think that's correct. Yes, sir.

19 Q. So I won't go over all the general rules
20 today, because I know you've done this before, but
21 just some important reminders.

22 It's obviously important that we attempt not
23 to talk over one another. That makes it difficult for
24 the court reporter.

25 Do you understand that?

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1 A. Yes, sir.

2 Q. And if you don't understand a question I'm
3 asking, please ask me for clarification to that
4 question. Okay?

5 A. Sounds good, yes, sir.

6 Q. And if you don't ask for clarification on a
7 question, the record will reflect that you understood
8 the question; correct?

9 A. That sounds fair.

10 Q. And you understand that even if your attorney
11 objects, you will have to answer the question
12 unless he instructs you not to answer.

13 A. Yes, sir.

14 Q. What did you do to prepare for today's
15 deposition?

16 A. I met with counsel in this room for most of
17 the day yesterday. Also, I read many of the documents
18 pertaining to these IPRs. Had a meeting approximately
19 a week or so ago, a Zoom meeting.

20 Q. And approximately how long was the meeting
21 yesterday?

22 A. It was a full day.

23 Q. 9:00 to 5:00?

24 A. Yes, sir.

25 Q. And the Zoom meeting from approximately two
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1 weeks ago, approximately how long was that?

2 A. I think that was an hour or less, if I
3 recall.

4 Q. Did you have any other meetings in
5 preparation for this deposition?

6 A. No, sir.

7 Q. And you said yesterday, counsel in this room
8 attended the preparation session; is that right?

9 A. Yes, sir.

10 Q. Did anyone else attend?

11 A. No, sir.

12 Q. Did anyone attend by phone?

13 A. I do not believe so.

14 Q. And with the Zoom meeting, who participated
15 in that meeting?

16 A. Mr. Brooks, Mr. Cune and Adam -- I can't
17 remember his last name.

18 Q. Is it Adam sitting here in the room right
19 now?

20 A. There was another Adam, I believe.

21 Q. Okay.

22 A. Adam sitting in the room.

23 Q. Okay. And did anyone else attend?

24 A. Yes, sir. I thought his name was Adam, but
25 I'm mistaken.

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1 Q. Okay. Do you know, was that individual an
2 attorney?

3 A. Yes, sir.

4 Q. Were there any non-attorneys present at any
5 of your meetings?

6 A. Not that I'm aware of.

7 Q. Have you spoken to anyone else regarding this
8 deposition?

9 A. I have not.

10 Q. Have you spoken to Marc Kruger since
11 September of 2023?

12 A. No, sir.

13 Q. Have you spoken to anyone at K-Fee systems
14 since September of 2023?

15 A. I have not.

16 Q. Have you spoken to anyone at the Kruger Group
17 since September of 2023?

18 A. No, sir.

19 Q. Have you spoken to anyone at Nespresso since
20 September of 2023?

21 A. No, sir.

22 Q. You said you reviewed some documents in
23 preparation for this deposition.

24 What documents did you review?

25 A. The petitions. Of course, I reviewed both of
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1 the petitions and the alleged prior art that's stated
2 in those petitions. I also reviewed my declarations,
3 both of the declarations, the '430 and the '932. I
4 also reviewed the previous declaration by Mr. Jobin
5 and other documents -- a few of the other patent and
6 related background document, prosecution history, et
7 cetera.

8 Q. And when you say, "prosecution history," are
9 you referring to the prosecution history of the '430
10 and '923 patents?

11 A. Yes, sir.

12 Q. Any other prosecution history?

13 A. Not in preparation for this deposition.

14 Q. And you said you reviewed some background art
15 patents. Do you recall what patents those were?

16 A. Yes, sir. They're Yokum, Jarisch, Repparini.
17 Castellano, I believe is another one. Rossi.

18 Q. Any others?

19 A. Another Yarithc, '929. And there were likely
20 a couple of others. I don't recall exactly which
21 those are off the top of my head.

22 Q. Do you recall approximately how long you
23 spent reviewing the Yokum reference?

24 A. Not distinct from the others, no, sir.

25 Q. Do you recall how long you spent reviewing

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1 the petitions?

2 A. I don't recollect any distinct breakdown of
3 how long I reviewed each of the documents.

4 Q. Do you recall how long you spent collectively
5 reviewing the documents you listed?

6 A. Yes, sir. That would be, I think total
7 around 18 hours.

8 Q. Okay. Did you review the Board's institution
9 decisions in the '430 and '923 patents?

10 A. I did not review those documents.

11 Q. Did you review any declarations from Marc
12 Kruger?

13 A. Not in preparation for this deposition, no,
14 sir.

15 MR. MCCRAW: I'd like to introduce what has
16 been previously marked as Exhibit 2017 in IPR
17 proceeding 2023-0052, the "Declaration of Laurens
18 Howle in Support of Patent Owners Response."

19 (Previously marked Exhibit 2017 was made
20 available to the witness.)

21 BY MR. MCCRAW:

22 Q. Is Exhibit 2017 the declaration you submitted
23 in IPR2023-00502?

24 A. Yes, sir.

25 Q. And if you'd turn to Page 63 of that exhibit,
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1 Is that your signature?

2 A. Yes, sir, it is.

3 Q. And you signed this on December 6, 2023?

4 A. I did, yes, sir.

5 Q. And you signed it under penalty of perjury;
6 correct?

7 A. Yes, sir.

8 Q. Have any of your opinions in this declaration
9 changed since you signed it?

10 A. They have not.

11 Q. Is there anything inaccurate in your
12 declaration?

13 A. Not that I'm were aware of, no, sir.

14 Q. Is there anything you'd like to correct in
15 the declaration?

16 A. No, sir.

17 Q. Does your declaration contain all of the
18 opinions you intend to offer in this IPR as of today?

19 A. Certainly, those are my main opinions, but if
20 the discussion leads, there might be others that come
21 out.

22 Q. And this declaration includes all the
23 analysis you believe is necessary to support your
24 opinions?

25 A. Yes, sir.

1 MR. MCCRAW: I would like to introduce what
2 has been previously marked as Exhibit 2017 in IPR
3 No. 2023-00485, the "Declaration of Laurens Howle in
4 Support of Patent Owner Response.

5 (Previously marked Exhibit 2017 was made
6 available to the witness.)

7 BY MR. MCCRAW:

8 Q. Is Exhibit 2017, that I just handed you, a
9 correct copy of the declaration you submitted in
10 IPR2023-00485?

11 A. It seems to be, yes, sir.

12 Q. If you'd turn to Page 100 for me.

13 A. Yes, sir.

14 Q. Is that your signature?

15 A. It is.

16 Q. And it you signed it on December 6, 2023?

17 A. I did.

18 Q. And you signed it under penalty of perjury;
19 correct?

20 A. Yes, sir.

21 Q. Have any of your opinions in this declaration
22 changed since signing?

23 A. They have not.

24 Q. Is there anything inaccurate in your
25 declaration?

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1 A. Not that I'm aware of.

2 Q. Is there anything you'd like to correct in
3 this declaration?

4 A. No, sir.

5 Q. Does this declaration contain all of the
6 opinions you intend to offer in this IPR as of today?

7 A. Like my previous answer, in case -- if the
8 discussion leads to something else, that might be --
9 that might happen.

10 Q. Does this declaration include all the
11 analysis you believe is necessary to support your
12 opinions?

13 A. Yes, sir.

14 Q. Without disclosing any conversations with
15 attorneys, tell me about the process for preparing
16 these declarations.

17 A. Simply reviewed the documents that I
18 previously listed, or previously cited, and discussed
19 some of those.

20 Q. Did you draft the declaration yourself?

21 A. I worked collaboratively with the legal team
22 here.

23 Q. Who provided the first draft of these
24 declarations?

25 A. I don't recall. I think I provided some of
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1 the content and they provided some of the other
2 content.

3 Q. Did you review drafts of the patent owner
4 response in these actions?

5 (The witness reviewed material.)

6 THE WITNESS: I reviewed the documents listed
7 here. The table beginning on Page 6. I'm trying to
8 see if the patent owner response is listed in that
9 table. Yeah. Actually, I do recall reviewing that.

10 BY MR. MCCRAW:

11 Q. Do you know whether the patent owner response
12 was drafted before or after your declarations?

13 A. I don't recall, sir.

14 Q. You said it was a collaborative effort with
15 counsel to work on these declarations.

16 Did any non-lawyers participate?

17 A. Not that I'm aware of, no.

18 Q. Was anyone at K-Fee Systems involved in the
19 preparation of your declarations?

20 A. No, sir.

21 Q. Was anyone at Kruger Group involved in the
22 preparation of the declarations?

23 A. No, sir.

24 Q. Was Marc Kruger involved in the preparation
25 of your declarations?

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1 A. No, sir.

2 Q. Approximately how long did you spend writing
3 each declaration?

4 A. I don't recall off the top of my head. Some
5 of this was relatively easy because there was some cut
6 and paste between the two declarations. Perhaps
7 20 hours or so.

8 Q. Per declaration, or total?

9 A. No, sir. Much of this -- of course, the
10 documents had come up in previous -- in my previous
11 declaration. So I was familiar with a great deal of
12 this already.

13 So this one was a bit more streamlined than
14 previous. So if I had to guess, I would say maybe
15 20 hours total for both of these.

16 Q. Okay. And you're aware that there's a number
17 of current patent disputes between K-Fee and
18 Nespresso; is that right?

19 A. Yes, sir.

20 Q. Do you have any opinions about any of those
21 other disputes beyond what is in these declarations?

22 A. I have not prepared those.

23 Q. So you don't have any other opinions at this
24 time about any other matters other than these

25 declarations and the one from the '491 patent? IPR2023-00502
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1 A. At this time, I have produced no opinions.

2 Q. So just to make this easier on the record and
3 the exhibits, if I refer to "the '502 IPR," will you
4 understand that to be IPR2023-00502?

5 A. Yes, sir.

6 Q. Great. I'd like you to turn back to
7 Exhibit 2017 from the -502 IPR, and I'd like you to
8 turn to Paragraph 16.

9 (Pause.)

10 THE WITNESS: 16. Yes, sir.

11 BY MR. MCCRAW:

12 Q. And you've indicated that you've reviewed the
13 following documents which are shown in a chart below;
14 is that right?

15 A. Yes, sir, that's right.

16 Q. Did you rely on any information, other than
17 the materials cited in this chart, in forming these
18 opinions?

19 A. Yes, sir.

20 Q. What other information?

21 A. Forty years of experience as an engineer.

22 Q. Okay. Other than your personal experience,
23 did you rely on any other materials, meaning
24 documents, publications?

25 A. I certainly did not cite to any other IPR2023-00502
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1 materials, but...

2 (The witness further reviewed material.)

3 THE WITNESS: Let's see. I actually did
4 review quite a few additional technical documents from
5 the scientific literature that I ended up not using.
6 And so those are not included in the list of exhibits.

7 BY MR. MCCRAW:

8 Q. Okay. And those documents don't form any
9 basis for the opinions in your report; is that
10 correct?

11 A. I did not rely on those in forming the basis
12 of this report.

13 Q. I'd like to direct you to Paragraph 17 of
14 this declaration. It's on Page 11. It says, "I also
15 referenced other publications in order to confirm my
16 understanding of the state of the art."

17 Do you see that?

18 A. Yes, sir.

19 Q. What publications did you review that are not
20 listed here?

21 A. It could have been some definitions.

22 Q. What "definitions"?

23 A. Common terms, to make sure that I was
24 using -- that I was understanding what some of the
25 patents were saying. Let's see if I can recall

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1 particular example.

2 I do recall the definition for P-E-T plastic,
3 for example.

4 Q. And what source did you use to obtain these
5 definitions?

6 A. That would have been an online search.

7 Q. Okay.

8 A. Additionally, as I mentioned, I did bring up
9 the modeling turbulent flows and course media. I also
10 consulted a few other references, scientific
11 references related to the same topic, but did not end
12 up using those in my declaration.

13 Q. And what -- could you name the title of those
14 documents that you reviewed but did not use?

15 A. One of them, the author was Yoka Behr. It
16 probably says flows in porous media.

17 Another one was published by my colleague
18 Adrian Bejan, having to do with porous media flow.
19 You can easily find those citations.

20 Q. Any others?

21 A. Yes, sir. There is an online book that I
22 downloaded. I did not cite to that in this one. The
23 title I don't have off the top of my head.

24 Q. What was the nature of that online book?

25 A. Flows in porous media.

1 Q. Do you know the publisher?

2 A. No, sir.

3 Q. Do you know the author, or any of the
4 authors?

5 A. That one I don't recall the author. I have
6 an extensive library on fluid mechanics and fluids in
7 porous media.

8 Q. Any other materials?

9 A. My library from the scientific peer-review
10 journals having to do with coffee brewing, I've got a
11 couple of hundred publications in there. I consulted
12 some of those, the name of which or the author I don't
13 recall off the top of my head, but I looked for such
14 things as typical porosities of different coffee
15 grinds, along those lines.

16 Journal of Food Science is one of the
17 journals that I routinely go to for that.

18 Q. So you reviewed the Journal of Food Science?

19 A. Certain publications in the Journal of Food
20 Science.

21 Q. Approximately how many coffee publications
22 did you review?

23 A. Perhaps a dozen. But as I mentioned, I have
24 an extensive library of those publications.

25 Q. And other than the publications from the
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1 Journal of Food Science, what types of publications
2 did you review dealing with coffee?

3 A. Other peer-reviewed journals, the titles of
4 which I don't recall off the top of my head.

5 Q. What was the subject matter they were
6 directed to?

7 A. Coffee and coffee brewing.

8 Q. Anything more specific than that?

9 A. Extraction of trimethylxanthine.

10 Q. Are there any other definitions that you
11 reviewed other than PET plastic?

12 A. I do recall looking up the definitions of
13 turbulent and laminar flow, not for my own knowledge
14 but looking how to explain that in my declarations,
15 and I believe I cited to those here.

16 Q. What were the sources of definitions for
17 turbulent laminar flow that you consulted?

18 THE WITNESS: Let's see if I have that. I'm
19 just going to check here. I think I might have
20 included that. So please bear with me one second.

21 (The witness reviewed material.)

22 THE WITNESS: It would have been the Behr
23 flow in porous media book.

24 BY MR. MCCRAW:

25 Q. Okay.

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1 A. There might have been others. Turbulent and
2 laminar transition is different than fluid saturated
3 porous media than in bulk fluids. So I referred to
4 some of those specific documents.

5 Q. Okay. If I refer to "the 485 IPR," will you
6 understand that I'm referring to IPR2023-00485?

7 A. Yes, sir.

8 Q. Can you turn to Exhibit 2017 in the 485 IPR,
9 and in particular, Paragraph 17.

10 A. Paragraph 17. Okay. Yes, sir.

11 Q. It says, "I also referenced other
12 publications in order to confirm my understanding of
13 the state of the art."

14 Do you see that?

15 A. Yes, sir.

16 Q. Is your answer for Paragraph 17 in the 485
17 IPR the same -- strike that.

18 Is the information that you referenced in the
19 485 IPR the same as what you just explained for the
20 502 IPR?

21 A. I don't recall any differences.

22 Q. Now, your Paragraph 17, in both the 502 and
23 485 proceedings, indicates that you referenced these
24 publications, but you stated that you don't cite them
25 anywhere; is that correct?

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1 A. Yes, sir. Perhaps I should have written --
2 done a better job of writing this. I referred to
3 those, but I did not reference or cite to those within
4 these documents.

5 Q. Any of those documents that you mentioned in
6 connection with Paragraph 17, do any of them form --
7 strike that.

8 In any of the documents you mentioned in
9 connection with paragraph 17, do they inform the bases
10 for your opinions in either the 502 or 430 IPR?

11 A. Only as far as general background information
12 is concerned, but all of the important documents that
13 were pertinent I referenced in this report.

14 Q. What do you mean by "pertinent"?

15 A. Ones that need to be cited.

16 Q. What do you mean by, "needs to be cited"?

17 A. For example, if I cite to a particular
18 document in my report, I would include that in the
19 table of references here.

20 Q. How did you decide what documents to cite
21 versus what documents that you reviewed that you did
22 not cite?

23 A. Everything that I thought would need to be
24 included I put in the table here. The others that I
25 decided not to use, I did not cite.

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1 Q. What was the reason that you didn't cite any
2 of the coffee publications that you consulted?

3 A. They did not seem to be particularly straight
4 and relevant at this time.

5 Q. So those coffee publications weren't relevant
6 to the issues in the 502 or 485 IPRs; is that right?

7 A. No, sir, I would not say that. I would say
8 those publications were not the core basis of my
9 opinions. So I did not include those.

10 Q. Did those publications inform the basis for
11 your opinions?

12 A. Not directly, but when I -- I recall first
13 drafting this, I included well over 100 scientific
14 publications that I ended up weeding out as this one
15 alone because I did not use those to -- use those in
16 any of my analysis.

17 Q. Who decided to remove those, you or your
18 attorneys?

19 A. I removed what was not needed.

20 Q. What was the reason you didn't cite to any of
21 the porous media publications that you referenced in
22 connection with Paragraph 17?

23 MR. PLEUNE: Object to the form.

24 THE WITNESS: I'm sorry, can you restate the
25 question.

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1 MR. MCCRAW: Can you read the question back,
2 please.

3 (Record read.)

4 THE WITNESS: I would say that I did not see
5 an analysis in the petitions that required me to use
6 those documents.

7 BY MR. MCCRAW:

8 Q. Were the 100 publications you mentioned, that
9 were originally in your draft declaration, all related
10 to porous media?

11 MR. PLEUNE: Object to form.

12 THE WITNESS: The publications that I
13 originally cited have to do with many aspects of
14 coffee making and beverage brewing. Flows in porous
15 media is just one of the subsets of those disciplines.

16 BY MR. MCCRAW:

17 Q. Let's turn to Exhibit 2017, your declaration,
18 in the 502 IPR, and in particular, Paragraph 18.

19 It states, "My opinions are additionally
20 guided by my appreciation of how a POSITA would have
21 understood the Claims of the '923 patent and its
22 earlier filed applications at the time of the
23 invention, which I have been asked to assume is
24 February 7, 2011.

25 Do you see that?

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1 A. Yes, sir.

2 Q. Do you know where that date comes from,
3 February 7, 2011?

4 A. Whenever I have to deal with a patent case, I
5 ask the attorneys I'm working with to give me what
6 they assume to be the priority date. I understand
7 that a priority date is a rather complicated legal
8 aspect. So that's why I always ask to be given what
9 date I'm to assume when I'm preparing my work.

10 Q. What do you understand the relevance of
11 February 7, 2011 to be?

12 A. I understand that that would be -- roughly, I
13 believe that's the second German application date.
14 Although, I might be wrong.

15 (The witness reviewed material.)

16 THE WITNESS: I believe that is wrong. So if
17 I look at my 485, my declaration, that date is
18 September 2, 2010.

19 BY MR. MCCRAW:

20 Q. I'm asking you about the 502 IPR declaration,
21 Dr. Howle.

22 A. Yes, sir. That was the date I was told to
23 assume for this document.

24 Q. Okay. Do you understand the relevance of
25 that date?

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1 A. I recall discussing it. I don't recall the
2 details of that.

3 Q. And as part of forming the opinions in your
4 485 and 502 IPR declarations, did you interpret the
5 claim language of the patents in question?

6 A. Yes, sir.

7 Q. Let's start with the '430 patent. And if I
8 say, "the '430 patent," will you understand I'm
9 referring to U.S. Patent No. 11,230,430?

10 A. Yes, sir.

11 Q. Okay. Did you apply any claim constructions
12 when interpreting the '430 patent?

13 (The witness further reviewed material.)

14 THE WITNESS: I recall using plain and
15 ordinary meaning for the claim terms.

16 BY MR. MCCRAW:

17 Q. Okay. So you applied the plain and ordinary
18 meaning for all of the claim terms in the '430 patent;
19 is that correct?

20 A. I don't recall doing differently.

21 Q. Okay. And how did you determine the plain
22 and ordinary meaning of the claim terms of the
23 '430 patent?

24 A. Based on my experience as an engineer.

25 Q. Did any documents inform the plain and
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1 ordinary meaning of the claim terms of the '430
2 patent?

3 A. Any external documents?

4 Q. Correct.

5 A. I'm sure I referred to some external
6 documents previously in a writing to this
7 (indicating).

8 Q. Okay. Are all of the documents that you --
9 strike that.

10 Are all the documents that informed your
11 plain and ordinary meaning of the '430 patent claim
12 terms cited in your declaration?

13 MR. PLEUNE: Object to the form.

14 THE WITNESS: I would have cited to a
15 document that I used in forming those opinions had I
16 used it. So if I understand your question correctly,
17 the answer would be yes.

18 BY MR. MCCRAW:

19 Q. Okay. Let's talk about the '923 patent. And
20 if I say, "the '923 patent," will you understand I'm
21 referring to U.S. Patent No. 10,994,923?

22 A. Yes.

23 Q. Did you apply any claim constructions when
24 interpreting the '923 patent?

25 A. Yes, sir.

1 Q. What claim constructions did you apply?

2 A. Those would have been plain and ordinary
3 meaning, similar to my previous response.

4 Q. How did you determine the plain and ordinary
5 meaning of the claim terms of the '923 patent?

6 A. Similar to the '430 patent, based on my
7 experience, over 40 years of experience.

8 Q. Did any documents inform the plain and
9 ordinary meaning of the claim terms of the
10 '923 patent?

11 A. External documents, I would have cited here.

12 Q. Okay. So all of the documents that informed
13 your plain and ordinary meaning of the '923 patent
14 claim terms are cited in your declaration; is that
15 right?

16 A. As I prepared those at that time, yes, sir.

17 Q. What do you mean by, "as I prepared those at
18 that time"?

19 A. Well, I've been informed that since I filed
20 these, that there has been a federal circuit claim
21 ruling that barcode, for example, is to be given its
22 plain and ordinary meaning. Of course, that was not
23 available at this time. So I did not include that in
24 these documents.

25 Q. Does the federal circuit opinion change your
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1 opinion?

2 A. No, sir.

3 Q. Let me ask that more clearly.

4 Does the federal circuit opinion change any
5 of your opinions in the '430 or '923 patent IPRs?

6 A. No, sir, it does not change any of those
7 opinions.

8 MR. MCCRAW: I would like to introduce what
9 has been previously marked as Exhibit 1001 in the 502
10 patent IPR. It's a copy of the '923 patent.

11 (Previously marked Exhibit 1001 was made
12 available to the witness.)

13 MR. MCCRAW: I would also like to introduce
14 what has been marked as Exhibit 1001 in the 485 IPR,
15 which is the '430 patent.

16 (Previously marked Exhibit 1001 was made
17 available to the witness.)

18 BY MR. MCCRAW:

19 Q. What's your understanding of the components
20 of a single serve beverage capsule?

21 A. Let me just ask you to clarify the question.

22 Are you asking me to tell you what components
23 of the capsule are listed here in the two patents?

24 Q. No. I'm just asking as a person of skill in
25 the art, what's your understanding of the components

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1 in a single serve beverage capsule?

2 A. Well, they're fairly listed here. There is
3 the capsule itself.

4 Q. When you say, "the capsule itself," what do
5 you mean?

6 A. Well, that generally which would -- so we're
7 speaking in generalities -- right? -- and not to
8 either one of these patents? I just want to make sure
9 I'm understanding what you're asking me.

10 Q. Sure.

11 I'm just asking your understanding, as a
12 person of ordinary skill in the art, of what are the
13 components of a single serve beverage capsule?

14 A. I've worked on analysis involving many
15 different components of single-serve capsules, and
16 they generally have some type of a receptacle in which
17 there is a generally roasted and ground medium to be
18 extracted and put in those. Typically, they might be
19 closed.

20 So just in broad, general terms, those
21 certainly are found in most capsules.

22 Q. And when you say, "closed," what are examples
23 of what the capsule would be closed by?

24 A. Some type of material that seals them to
25 outside gas and prevents leakage of gas or

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1 contamination of the medium to be extracted.

2 Q. Is one of those materials a membrane?

3 MR. PLEUNE: Object to the form.

4 THE WITNESS: Okay. Now I think we're
5 getting to specific claim language and not
6 generalities. So if you -- so let me restate that.

7 Are you now asking me to get to specifics of
8 either one of these patents?

9 BY MR. MCCRAW:

10 Q. I'm asking you, as a person of ordinary skill
11 in the art, what your understanding is of the
12 components of a single-serve capsule. And I'm asking
13 you if one of the materials, that when you said closed
14 the capsule, one of those is a membrane?

15 A. I might have seen one of these capsules that
16 might refer to a membrane as part of it.

17 Q. You previously mentioned a "receptacle."
18 What do you mean by "receptacle"?

19 A. That into which the ground beverage component
20 is placed.

21 Q. What would that receptacle be made of?

22 A. It could be made of any number of materials
23 that are suitable for food preparation.

24 Q. Could you give me some examples.

25 A. P-E-T, we mentioned that earlier. That could
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1 be one.

2 Q. Any others?

3 A. I've seen these made out of aluminum, out of
4 stainless steel.

5 Q. Any others?

6 A. Other types of plastics that are typically
7 used in the food service industry.

8 Q. What's your understanding of how aluminum
9 single-serve capsules are made?

10 MR. PLEUNE: Object to form.

11 THE WITNESS: Typically, these might be made
12 with an extrusion or a stamp. Stamping extrusion.

13 BY MR. MCCRAW:

14 Q. So does that involve a flat sheet that is
15 stamped into a shape? Is that what you're describing?

16 A. It can be. That's one way to make these.

17 Q. Okay. And that stamping creates a base
18 element; is that right?

19 A. Well, now we're getting into, again, specific
20 claim terms. So if you show me an item and ask if
21 that's a base element, you know, I'm going to have to
22 refer to these patents. I previously said,
23 "receptacle," and I don't really see any reason to go
24 beyond receptacle and now define separately a base
25 element.

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1 If you'd like to look at one of these patents
2 and go through these or the other documents, then I
3 would say that's appropriate for trying to refine some
4 of these terms further.

5 Q. Do you understand the term "base element" to
6 be different from a receptacle?

7 MR. PLEUNE: Object to form.

8 THE WITNESS: I would say it would depend on
9 the context.

10 BY MR. MCCRAW:

11 Q. What context would change the answer?

12 A. Well, generally speaking, a base element
13 could be inside of a receptacle. And again, I'm not
14 relying on any one of these patents. So I'm speaking
15 in a very broad context. So it would depend on the
16 context in which you're asking me to opine.

17 Q. I'm asking about a sheet of aluminum that has
18 been stamped into a shape of a capsule, and I guess my
19 question is does that shape -- would you describe that
20 as "cup shaped"?

21 A. Perhaps. It depends. It can be cup shaped.
22 There can be a myriad of shapes that are made from
23 that stamping process.

24 Q. So you could use the stamp to make a variety
25 of different shapes in the capsule?

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1 A. It could be, yes.

2 Q. And so changing the shape of the stamp would
3 change the shape of the capsule body; is that right?

4 A. The shape of the stamp. There's other things
5 that are required. There's a plug and a cavity
6 outside of the capsule that are used when -- your
7 stamp extrusion. So those would have to change. So
8 you could change draft angle on the wall, for example.
9 Draft angle is important when stamp extruding devices.

10 Q. Okay. And that stamped wall would have an
11 inner surface that would face the coffee grounds in
12 the capsule?

13 A. Generally speaking, a capsule could have
14 that.

15 Q. Okay. And then the outer surface of that
16 body would be facing the outside air; is that right?

17 A. In that context, in a very general context,
18 you could come up with an arrangement where that would
19 be the case.

20 Q. Describing deep drawing, you mentioned the
21 stamp, and you also mentioned a plug and cavity.

22 Would you describe all of that together as,
23 basically, the mold for the deep drawn capsule?

24 A. Let me just ask for clarification because
25 some capsules that I've worked with are molded
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1 injection molded, and you're talking about mold for
2 stamping process still?

3 Q. Yeah. I'm talking about aluminum deep
4 drawing.

5 A. And so I apologize, but I lost your question
6 when I was asking mine. So could you please restate
7 or --

8 Q. Sure.

9 I just wanted to get clarification that --
10 because you mentioned a stamp, and then you also
11 mentioned a plug and cavity, and I just wanted to
12 understand, would you describe all of those things
13 together as a mold?

14 A. I typically use the term "mold" when talking
15 about injection molding.

16 Q. Okay.

17 A. And if I were talking with my colleagues, I
18 would not use the term "mold" in that context -- in
19 that general context.

20 Q. Is there a term you would use to refer to the
21 stamp and the plug and the cavity?

22 A. I would probably say plug and cavity.

23 Q. Okay. In 2010 a person skilled in the art
24 would have known how to change the shape of the stamp
25 and plug and cavity to modify a shape of a capsule, is

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1 that right?

2 A. In general terms, yes, sir.

3 Q. And that stamp and plug and cavity could be
4 modified to have indentations on the capsule wall, if
5 needed?

6 MR. PLEUNE: Object to the form.

7 THE WITNESS: Well, there are any number of
8 changes that could be made, but there are limits when
9 you're deep drawing or stamping having to do with
10 draft angle, and also, the geometry and the extrusion
11 capabilities of the particular sheet you're using for
12 stamping.

13 There can be a number of different
14 geometrical features that might be incorporated into
15 the item that is -- that results.

16 BY MR. MCCRAW:

17 Q. Okay. And one of those geometric features
18 would be indentations in the wall?

19 MR. PLEUNE: Object to the form. Calls for a
20 legal conclusion.

21 THE WITNESS: Well, I would need a bit of
22 clarification on what you mean by "indentations."
23 There are some that would not be possible to make,
24 actually.

25 BY MR. MCCRAW:

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1 Q. Okay. One of the geometric features that
2 could be modified in a stamp and plug would be
3 recessed in the capsule wall?

4 MR. PLEUNE: Object to the form.

5 THE WITNESS: Again, I'm going to need
6 further definition or explanation of what you mean by
7 "recesses." Just like with your previous question,
8 there are some geometrical features that cannot be
9 produced by stamp extrusions.

10 BY MR. MCCRAW:

11 Q. What are some examples of features that
12 cannot be produced by stamp extrusion?

13 A. Anything with a negative draft angle.

14 Q. When you say, "negative draft angle," what do
15 you mean?

16 A. Wider at the plug end and at the mold -- at
17 the cavity end.

18 Q. When you say, "plug end," what portion are
19 you referring to?

20 A. From the stamping machine. So we're -- since
21 we're generally talking about capsules, and we're not
22 talking about any of the particular patents as far as
23 I understand, if you tried to come up with a capsule,
24 we talked about general capsules that's wider at what
25 you were talking about a bottom before than at the

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1 top, you cannot produce that. That would have a
2 negative draft angle.

3 You could not produce that with a typical
4 stamp extrusion process.

5 MR. MCCRAW: Okay. Let's take a quick break.

6 (A recess was taken from 10:15 a.m.
7 to 10:30 a.m.)

8 BY MR. MCCRAW:

9 Q. All right, Dr. Howle. Did you speak with
10 your counsel about the substance of your testimony
11 during the break?

12 A. No, sir, I did not.

13 Q. Let's turn to Exhibit 1001 of the 502 IPR,
14 which is the '923 patent.

15 A. Okay.

16 Q. And could you turn to Claim 1. It's in
17 Column 12. And the claim recites, in part,
18 "Single-serve capsule for making a beverage having a
19 base element made of metal with a cavity that is free
20 of a filter."

21 Do you see that?

22 A. Yes, sir, I do see that.

23 Q. And I'd also like to direct you to Exhibit
24 1001 in the 485 IPR, which is the '430 patent, and I'd
25 also like to direct you to Claim 1. And in

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1 particular, Column 13, Lines 5 and 6. And it says, in
2 part, "Wherein the single-serve capsule is free of a
3 filter that is located inside of the cavity."

4 Do you see that?

5 A. Yes, sir.

6 Q. So both patents, both the '430 and
7 '923 patents, require a capsule with a cavity that's
8 free of a filter; is that correct?

9 A. They both recite that, yes, sir.

10 Q. What do you understand the term "free of a
11 filter" to mean in K-Fee's patent claims?

12 THE WITNESS: Bear with me just a moment,
13 please.

14 (The witness reviewed material.)

15 THE WITNESS: To answer that, I would just
16 refer to the entirety of Claim 1 for that specific
17 example.

18 So Claim 1 says, "A beverage system for
19 making a beverage comprising a single-serve capsule
20 comprising a base element with a cavity in which a raw
21 beverage material is provided and flange extending
22 outwardly from the base element. The flange is
23 comprising a top side and an opposing bottom side, a
24 cover that is fastened to the top side of the flange
25 to close the cavity and a barcode provided on the

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1 bottom side of the flange and a beverage machine
2 comprising a sensor detector configured to read the
3 barcode, a brewing chamber configured to receive the
4 base element of the single-serve capsule and having an
5 end portion that opposes the bottom side of the flange
6 and a pump control to supply water to the single serve
7 capsule wherein the single-serve capsule is free of a
8 filter that is located inside the cavity, the
9 single-serve capsule comprises an upper end portion
10 that has an annular convexity and a lower end portion
11 that has a annular concavity relative to central
12 access of the base element and a barrier layer to
13 prevent moisture or aroma from escaping out of the
14 single-serve capsule wherein the beverage machine also
15 comprises a mandrel that is configured to pierce the
16 cover in a region that is all set from the central
17 access of the base element, a seal that is configured
18 to seal against the cover and a region between" the
19 "peripheral edge" -- I'm sorry. ... "a peripheral edge
20 of the flange and the region of the cover that is
21 pierced by the mandrel. A pair of holding arms for
22 engaging the single-serve capsule, and a dropping box
23 for the single-serve capsule to fall into wherein the
24 pump is controlled to push the water into the
25 single-serve capsule only upon determination that the

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1 red barcode agrees with the stored reference."

2 So my understanding would be that everything
3 that's needed is contained within that claim.

4 BY MR. MCCRAW:

5 Q. Okay My question was a little different,
6 Dr. Howle. I asked what do you understand the term
7 "free of a filter" to mean in K-Fee's patents?

8 MR. PLEUNE: Object to the form.

9 THE WITNESS: Well, it says here exactly in
10 Claim 1, "a single-serve capsule is free of a filter
11 that is located inside the cavity." So that's what I
12 would understand that to mean.

13 Then you asked about the '932 patent as well,
14 Claim 1. I won't read that to you unless you'd like
15 me to.

16 Here, it says, "Single-serve capsule for
17 making a beverage having a base element made of metal,
18 the cavity that is free of a filter."

19 So in both cases you see the language -- let
20 me see if they use "cavity." In one case I see a
21 capsule that is free from the filter, and in the other
22 case I see a cavity that is free of a filter.

23 BY MR. MCCRAW:

24 Q. Which claim do you see a capsule free of a
25 filter?

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1 A. I'm looking at -- let me see if I...

2 (Pause.)

3 THE WITNESS: So I'm looking at '430, 13, 5,
4 "wherein a single-serve capsule is free of a filter."

5 MR. MCCRAW: Can you continue reading that,
6 into Line 6.

7 THE WITNESS: ... "that is located inside of
8 the cavity."

9 BY MR. MCCRAW:

10 Q. Do you understand that phrase to mean that
11 the cavity lacks a filter?

12 (The witness reviewed material.)

13 THE WITNESS: ... "that's free of a filter
14 that is located inside the cavity."

15 So yes, sir, I would agree with that.

16 BY MR. MCCRAW:

17 Q. What do you understand the term "free of a
18 filter" to mean?

19 MR. PLEUNE: Object to the form.

20 MR. MCCRAW: Let me ask that question a
21 little differently.

22 Q. What do you understand the term "free of a
23 filter" to mean in the context of K-Fee's patent
24 claims?

25 MR. PLEUNE: Object to form.

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1 (The witness further reviewed material.)

2 THE WITNESS: Well, the patent claims contain
3 the information that's needed to be able to form that
4 opinion. So we just went over the fact -- and here,
5 I'm looking at '430, 13, 5, "Wherein a single-serve
6 capsule is free of a filter that is located inside the
7 cavity."

8 So that's -- plain and ordinary meaning is
9 fairly self-explanatory for that one.

10 BY MR. MCCRAW:

11 Q. And what's the plain and ordinary meaning of
12 a capsule that's free of a filter in the cavity in
13 K-Fee's patents?

14 MR. PLEUNE: Object to the form.

15 THE WITNESS: There is not a filter inside
16 the cavity.

17 BY MR. MCCRAW:

18 Q. Okay. Have you construed the word "cavity"
19 in either of your declarations, in the 502 or 485
20 IPRs?

21 A. I have not performed -- or construed that
22 other than plain and ordinary meaning.

23 Q. What interpretation are you applying to the
24 term "cavity" in the '430 and '923 patents?

25 MR. PLEUNE: Object to the form. Asked and
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1 answered.

2 (The witness further reviewed material.)

3 THE WITNESS: Well, I have read the claim in
4 light of the specification, and that was what I needed
5 to use.

6 BY MR. MCCRAW:

7 Q. What do you understand the cavity to be in --
8 strike that.

9 How do you define the cavity in the '430 and
10 '923 patents?

11 MR. PLEUNE: Object to the form.

12 THE WITNESS: I'm sorry. Did you say how do
13 I construe the cavity, or how do I interpret the
14 cavity?

15 MR. MCCRAW: Could you read back the
16 question, please?

17 (Record read.)

18 THE WITNESS: Thank you.

19 Well, here, from '430, "a base element with a
20 cavity in which a raw material is provided." So a
21 cavity would have a base element, and into that, raw
22 material would be provided.

23 BY MR. MCCRAW:

24 Q. Is the membrane of the capsule in the cavity
25 in the '923 and '430 patents?

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1 MR. PLEUNE: Object to form.

2 THE WITNESS: Well, okay. Now, we're
3 departing somewhat from your initial line of
4 questioning, and now you're using the term "membrane,"
5 and you're using that with reference to Claim 1.
6 There's no call out of membrane in Claim 1.

7 BY MR. MCCRAW:

8 Q. My question, Dr. Howle, is in the '923 and
9 '430 patents, is the membrane of the capsule in the
10 cavity?

11 MR. PLEUNE: Objection. Asked and answered.

12 THE WITNESS: Sir, I can't answer your
13 question because there is no membrane in those claims.

14 BY MR. MCCRAW:

15 Q. I'm not asking about the claims, Dr. Howle.
16 I'm asking about the '430 patent and '923 patent
17 disclosure.

18 And my question is in the '923 patent and
19 '430 patent, is the membrane of the capsule in the
20 cavity?

21 A. Can you please point to me, in the
22 specification from those two documents, where it
23 discusses membrane?

24 Q. Dr. Howle, in forming your opinions in the
25 485 and 502 declaration -- IPRs -- strike that.
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1 Dr. Howle, in forming your opinions in the
2 485 and 502 IPRs, you came to the conclusion that the
3 Yoakim reference does not disclose a capsule free of a
4 filter in the cavity; is that correct?

5 A. That is correct, yes, sir.

6 Q. In doing that, you had to determine what
7 defines the boundaries of a cavity; is that correct?

8 A. Yes, sir, I did that.

9 Q. So I'm asking in the context of K-Fee's
10 patent disclosure in the '430 and '923 patent, is the
11 membrane of the capsule in the cavity?

12 MR. PLEUNE: Same objection.

13 (The witness further reviewed material.)

14 THE WITNESS: Well, sir, here's the problem
15 I'm having with your question. There is no membrane
16 in the K-Fee patents. So I don't know how to answer
17 your question.

18 BY MR. MCCRAW:

19 Q. Let me ask it differently. In the context of
20 K-Fee's patent -- strike that.

21 In the context of the '430 and '923 patents,
22 is the cover of the capsule in the cavity?

23 MR. PLEUNE: Object to the form.

24 (The witness reviewed material.)

25 THE WITNESS: You did use the word "cover",
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1 correct?

2 BY MR. MCCRAW:

3 Q. Yes.

4 THE WITNESS: Okay. Thank you.

5 (The witness further reviewed material.)

6 THE WITNESS: All right. So '430 I see on
7 Claim 1, around 1263, "The flange comprising a top
8 side and opposing bottom side, a cover that is
9 fastened to the top side of the flange to close the
10 cavity. "

11 And then if we go to '923, 1257 or so, "The
12 capsule having a flange that is provided on the base
13 element and the cavity being closed by the metal cover
14 and so on.

15 So I would say that that forms -- all right.
16 Let me make sure.

17 Cavity is the point here, or capsule?

18 BY MR. MCCRAW:

19 Q. In the context of the '430 and '923 patents,
20 is the cover of the capsule in the cavity?

21 MR. PLEUNE: Object to form.

22 (The witness further reviewed material.)

23 THE WITNESS: In both of these patents the
24 cover is part of what defines the boundary of the
25 capsule.

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1 BY MR. MCCRAW:

2 Q. Okay. Is something that defines the boundary
3 of the cavity inside the cavity?

4 A. It is neither inside nor outside. It is the
5 boundary.

6 Q. Are the side walls of the capsule body inside
7 the cavity?

8 A. "Side walls of the capsule inside cavity."
9 So here, I'm -- let me analyze that.

10 Can you point to me in either one of the
11 declarations where I opined on that matter?

12 Q. Sir, I'm just asking you in the context of
13 the patents that you analyzed, are the side walls of
14 the capsule body inside the cavity?

15 A. I do not recall providing an opinion on that
16 matter.

17 Q. Sitting here today, can you answer whether
18 the side walls of the capsule body are inside the
19 cavity?

20 A. I would need to do the appropriate analysis,
21 which I have not done.

22 Q. Let's turn to the '430 patent, Exhibit 1001
23 from the 485 IPR.

24 Does the '430 patent disclose a capsule that
25 is free of a filter in the cavity?

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1 MR. PLEUNE: Object to form.

2 (The witness reviewed material.)

3 THE WITNESS: Well, again, sir, if you would
4 point me to, in the appropriate declaration to where I
5 provided that opinion, I'll be happy to discuss that.

6 MR. MCCRAW: I'd like to introduce
7 Exhibit 1047 from the 502 patent IPR.

8 I believe it's also 1047 in the 485 IPR. And
9 this is a September 2010 German application.

10 (Previously marked Exhibit 1047 was made
11 available to the witness.)

12 BY MR. MCCRAW:

13 Q. Have you seen this document before,
14 Dr. Howle?

15 A. Yes, sir.

16 Q. Do you understand this to be the September
17 2010 German application filed by K-Fee?

18 A. If I remember correctly, this is what we've
19 been calling "the second German application"; is that
20 right?

21 Q. That is one way to designate it.

22 A. Okay. Yes, sir.

23 MR. MCCRAW: Actually, let's jump back to
24 your '430 declaration, Exhibit 1017 for 485 IPR.

25 THE WITNESS: Okay. I have that. IPR2023-00502
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1 MR. MCCRAW: I'll direct you to a paragraph
2 in just a moment.

3 (Pause.)

4 BY MR. MCCRAW:

5 Q. Let's go to Paragraph 79 of your declaration.
6 Paragraph 79 recites, "The second German application
7 provides support for a single-serve capsule that is
8 free of a filter that is located inside of the cavity,
9 Element 1H, by disclosing that the raw material, and
10 if appropriate, inserts, in this case a filter, are
11 provided in this basic element in the description of
12 Figure 16."

13 And you cite Exhibit 1047 at Page 41,
14 Lines 13 through 35.

15 Do you see that?

16 A. Yes, sir, I do.

17 Q. Is that a disclosure in Exhibit 1047 of a
18 capsule that is free of a filter inside the cavity?
19 Strike that. Let me ask a clearer question.

20 Is the quote, "The raw material and, if
21 appropriate, inserts, in this case a filter, are
22 provided in this basic element" a disclosure of a
23 capsule that is free of a filter inside the cavity?

24 (The witness further reviewed material.)

25 THE WITNESS: Okay. I lost track of what
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1 exactly you were asking me. Can you please read me
2 the question again? I apologize for that.

3 BY MR. MCCRAW:

4 Q. Is the statement, "the raw material, and if
5 appropriate, inserts, in this case a filter, are
6 provided in this basic element" a disclosure of a
7 capsule that is free of a filter inside of the cavity?

8 (The witness reviewed material.)

9 THE WITNESS: Well, what is stated here, the
10 passage from the second German application that I
11 cite, "the raw material and, if appropriate, inserts
12 in this case, a filter provided in the basic element"
13 do provide support for a single-serve capsule that is
14 free of a filter that is located inside the cavity.

15 BY MR. MCCRAW:

16 Q. Okay. So that quote, "the raw material and,
17 if appropriate, inserts, in this case a filter, are
18 provided in this basic element," that's a disclosure
19 of free of a filter that is located inside the cavity;
20 is that right?

21 MR. PLEUNE: Object to the form.

22 THE WITNESS: I think your question is a bit
23 more restrictive than the passage says. ... "the raw
24 material and, if appropriate, inserts in this case, a
25 filter are provided in the basic element." I believe

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1 your statement said that discloses one that's absent
2 of a filter or --

3 BY MR. MCCRAW:

4 Q. Free of a filter in the cavity.

5 THE WITNESS: Free of a filter.

6 (The witness further reviewed material.)

7 THE WITNESS: Well, yes, sir, it does provide
8 support. If you look at Claim 1 of '430 single-serve
9 capsule that is free of a filter. That's what I cite
10 here, is apparently what that's called. And the
11 support comes from that -- what we're calling "the
12 second German application" with the quoted line right
13 there (indicating).

14 BY MR. MCCRAW:

15 Q. Okay. Are there any other passages from the
16 second German application that disclose a capsule free
17 of a filter in the cavity?

18 A. I would have to go back and read that
19 document again. My main work with that document was
20 in my September declaration, but, of course, that did
21 flow through to the present.

22 Q. Does the '430 patent contain any disclosures
23 of a capsule that is free of a filter inside the
24 cavity?

25 MR. PLEUNE: Object to form.

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1 THE WITNESS: In Claim 1 it says, "wherein
2 the single-serve capsule is located in the cavity."

3 BY MR. MCCRAW:

4 Q. Thank you.

5 Other than in the claim, can you identify any
6 disclosure in the '430 patent of a filter -- strike
7 that.

8 Other than the claim, can you identify any
9 disclosure in the '430 patent of a capsule that is
10 free of a filter in the cavity?

11 MR. PLEUNE: Object to form.

12 THE WITNESS: Well, I'm not a lawyer. It's a
13 good thing for the law, by the way, but my
14 understanding is the claim is what limits the
15 invention and not the specification. So if you'd like
16 me to go through and read the entire patent again, I
17 would be happy to do so and see if I can point it out
18 to you.

19 BY MR. MCCRAW:

20 Q. Dr. Howle, I apologize, I recognize you're
21 not a lawyer. I'm not asking you about the limits of
22 the claim. I'm asking you about the disclosure in the
23 patent document and whether the '430 patent discloses
24 a capsule that is free of a filter in the cavity.

25 MR. PLEUNE: Object to form.

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1 THE WITNESS: I would need the appropriate
2 time to go through the entirety of this patent in
3 order to be able to answer your question. Off the top
4 of my head, I do not recall.

5 BY MR. MCCRAW:

6 Q. Okay. Let's go to Column 1, Lines 50 through
7 53 of the '430 patent. And I'm referring to the
8 sentence that says, "Additionally the cavity could
9 contain one or several built-in elements, such as, for
10 example a filter, a non-woven, a felt, a shut-off
11 device and/or something similar to those."

12 Do you see that?

13 A. I do see that, yes, sir.

14 Q. Is this passage a disclosure of a capsule
15 that is free of a filter inside the cavity?

16 MR. PLEUNE: Object to form.

17 (The witness reviewed material.)

18 THE WITNESS: Well, the disclosure is exactly
19 in Claim 1 as I mentioned, wherein the single-serve
20 capsule is free of a filter that is located inside the
21 cavity.

22 BY MR. MCCRAW:

23 Q. Thank you.

24 What I'm trying to understand, Dr. Howle, is:

25 Is the sentence, "Additionally the cavity could
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1 contain one or several built-in elements, such as, for
2 example a filter, a non-woven, a felt, a shut-off
3 device and/or something similar to those," is that a
4 disclosure of a capsule that is free of a filter in
5 the cavity?

6 MR. PLEUNE: Objection. Asked and answered.

7 THE WITNESS: Well, I have the feeling that
8 you and I are going to go back and forth on this quite
9 a bit, but the disclosure is in Claim 1, as I
10 mentioned.

11 BY MR. MCCRAW:

12 Q. I'm not asking whether Claim 1 discloses that
13 feature. I'm asking if the sentence that I
14 articulated does or does not disclose that feature.

15 MR. PLEUNE: Objection. Asked and answered.

16 (The witness reviewed material.)

17 THE WITNESS: I have not provided an opinion
18 on Columns 1, Line 50 through 53, but again, I'll
19 reiterate that the disclosure for the capsule that is
20 free of a filter is in Claim 1.

21 BY MR. MCCRAW:

22 Q. Okay. Let's go to Exhibit 2017 for the
23 502 IPR.

24 A. The exhibit --

25 Q. It's your declaration in the 502 IPR. IPR2023-00502
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1 A. Thank you.

2 Q. I'd like to go to Paragraph -- I'm sorry.

3 64. Paragraph 64. In particular, on Page 33.

4 A. 33. Okay. Wait a minute. 502?

5 Q. Correct.

6 A. So 64 is on 32?

7 Q. It starts on 32 and ends on 33.

8 THE WITNESS: Just give me one second to
9 review it, please.

10 MR. MCCRAW: Sure.

11 (The witness reviewed material.)

12 THE WITNESS: Yes, sir.

13 BY MR. MCCRAW:

14 Q. I'm -- I'd like to ask you about the last
15 sentence of that paragraph. It says, "Indeed this is
16 evident from the passages and figures Petitioner
17 cites, which lack any express statement that Yoakim's
18 capsule lacks a filter."

19 Do you see that?

20 A. Yes, sir.

21 Q. Is that what you were looking for to
22 determine whether Yoakim disclosed a capsule free of a
23 filter --

24 MR. PLEUNE: Object to the form.

25 BY MR. MCCRAW:

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1 Q. -- in the cavity?

2 A. I'm sorry. I don't understand your question.

3 Is --

4 Q. Well, let me try to make it -- let me explain
5 it a little bit.

6 So it's your opinion that Yoakim doesn't
7 disclose a capsule free of a filter in a cavity;
8 right?

9 A. That is my statement here, yes, sir.

10 Q. To determine whether Yoakim disclosed a
11 capsule free of a filter in the cavity, were you
12 looking for an express statement that Yoakim's capsule
13 lacks a filter?

14 MR. PLEUNE: Object to form.

15 THE WITNESS: I considered the entire
16 application, including the claims, in reaching that
17 conclusion.

18 BY MR. MCCRAW:

19 Q. Yoakim's claims or K-Fee's claims?

20 A. Yoakim. We're talking about Yoakim here.

21 Q. Does the disclosure of an optional filter in
22 the cavity teach a capsule that's free of a filter in
23 the cavity?

24 MR. PLEUNE: Object to the form.

25 THE WITNESS: You haven't given me Yoakim
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1 yet, have you?

2 MR. MCCRAW: The question isn't about Yoakim.

3 Could you read back the question.

4 (Record read.)

5 THE WITNESS: Okay. Now I'm confused because

6 you were just pointing me to Yoakim here, and then --

7 so now you're asking me some very broad, general

8 question that's now completely out of context?

9 BY MR. MCCRAW:

10 Q. No. No. Sorry. My apologies, Dr. Howle.

11 What I'm trying to understand is what it was

12 you were looking for when you were evaluating whether

13 or not you could find, in anything, a disclosure of a

14 capsule that's free of a filter in the cavity.

15 I pointed you to Paragraph 64 because --

16 A. Uh-huh.

17 Q. -- you state, "Indeed, this is evident from

18 the passages and figures Petitioner cites, which lack

19 any express statement that Yoakim's capsule lacks a

20 filter."

21 So what I'm trying to understand is as a

22 person skilled in the art, determining whether any

23 document discloses a capsule that lacks a filter in

24 the cavity, whether you were looking for an express

25 statement that a cavity -- filter is absent. IPR2023-00502

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1 MR. PLEUNE: Object to the form. Outside the
2 scope.

3 To the extent you can understand the
4 question.

5 THE WITNESS: What I was looking for -- and
6 since your question is fairly broad, my answer will be
7 fairly broad.

8 What I was looking for is reading that
9 application, as one of ordinary skill would do so, and
10 trying to determine whether the inventor had
11 possession of this idea of a capsule free from a
12 filter. I did not find that.

13 Now, going off a little bit, back to '430, in
14 applying that same standard to '430, I do see that
15 there's support for that because Claim 1 expressly
16 says that there is no filter. Or free from
17 (inaudible).

18 BY MR. MCCRAW:

19 Q. In the context of the '430 patent, Claim 1,
20 would a disclosure of an optional filter in the cavity
21 provide a disclosure of a capsule free of a filter?

22 A. Well, sir, I'm going to go back to the same
23 answer time and again. Claim 1 discloses the freedom
24 of a filter.

25 Q. That's not my question.

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1 A. Well, then I'm confused here. Are you trying
2 to get me to insert a passage from the specification
3 into that claim?

4 Q. Were you looking for that exact language from
5 Claim 1 in the prior art to determine whether it's
6 disclosed?

7 MR. PLEUNE: Object to form.

8 THE WITNESS: Well, I think I've answered
9 that already. I was looking at the entire document,
10 interpreting that as a person of ordinary skill to see
11 if, in my opinion, as a person of ordinary skill,
12 would believe that the inventor had possession of that
13 feature.

14 BY MR. MCCRAW:

15 Q. Let's go back to your '430 declaration,
16 Exhibit 2017 and the 485 IPR, back to 79,
17 Paragraph 79, which we were discussing earlier. It's
18 on Page 49.

19 A. 79, yes, sir.

20 Q. I believe you explained that the statement,
21 "the raw material and, if appropriate, inserts, in
22 this case a filter, are provided in this basic
23 element," you explained that that was a disclosure of
24 a capsule free of a filter in the cavity; is that
25 right?

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1 MR. PLEUNE: Object to the form. Misstates
2 the testimony.

3 (The witness reviewed material.)

4 THE WITNESS: Well, my statement was, "The
5 second German application provides support for a
6 'single-serve capsule that is free of a filter that is
7 located inside the cavity' (element [1h] by disclosing
8 that 'the raw material and, if appropriate, inserts,
9 in this case a filter, are provided in this basic
10 element' in the description of Figure 16. Exhibit 1047
11 and 41:13-35."

12 That's exactly --

13 BY MR. MCCRAW:

14 Q. Sure.

15 So what about that quoted statement is a
16 disclosure of a capsule free of a filter in the
17 cavity?

18 MR. PLEUNE: Object to form. Misstates the
19 testimony.

20 MR. MCCRAW: Let me ask it differently.

21 Q. What about that statement provides support
22 for a capsule free of a filter located inside the
23 cavity?

24 (The witness reviewed material.)

25 THE WITNESS: Well, my reading of that, that
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1 is a description of Figure 16. So my interpretation
2 of that, together with Figure 16 of that second German
3 application and my interpretation of that, as a person
4 of ordinary skill, would lead me to believe that in
5 this instance there is support for a single-serve
6 capsule that is free of a filter located in the
7 cavity.

8 So that passage, I think, is inappropriate to
9 be taken out of the context of the figure which it is
10 describing.

11 BY MR. MCCRAW:

12 Q. What about the figure discloses a capsule
13 that is free of a filter in the cavity?

14 (The witness reviewed material.)

15 THE WITNESS: Bear with me just a second,
16 please. I'm refreshing my memory on the call-outs.

17 (The witness further reviewed material.)

18 THE WITNESS: So I'm looking at 16. First of
19 all, I'll point out that's a detailed cross-sectional
20 view showing an orthographic projection of an
21 invention that is disclosed in the second German
22 application. And so there in the description
23 connected with that, I think it's 41:13 through -35,
24 there is no discussion of a filter inside that
25 detailed drawing.

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1 So in that case, if I were to look to that
2 detailed drawing, along with the description, I would
3 not see a filter.

4 BY MR. MCCRAW:

5 Q. Okay.

6 MR. PLEUNE: We've been going for a little
7 over an hour. Is now a good time for a break?

8 MR. MCCRAW: Just a couple more questions,
9 and then yes.

10 MR. PLEUNE: Okay.

11 BY MR. MCCRAW:

12 Q. The -- do you understand in Figure 16
13 Element 29 to be a piercing spike?

14 A. Yes, sir, I believe that is the correct
15 terminology they use, but if that's not the exact
16 terminology, I am following what you're asking.

17 Q. Yeah, I think they call it a "piercing spike"
18 if you look at the list of designations.

19 A. Yes, sir. Thank you.

20 Q. And you understand that piercing spike to be
21 piercing the cover of the capsule; is that right?

22 A. I do, yes, sir.

23 Q. Okay. Is that -- is the hole that the
24 piercing spike makes in the cover of the capsule a
25 filter inside the cavity of the capsule?

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1 MR. PLEUNE: Object to form.

2 THE WITNESS: Well, there's no disclosure of
3 that in here that I'm aware of, and I have not formed
4 that opinion.

5 MR. MCCRAW: Let's take a break.

6 (A recess was taken from 11:34 a.m.
7 to 11:50 a.m.)

8 BY MR. MCCRAW:

9 Q. Welcome back, Dr. Howle.

10 Did you speak with your counsel about the
11 substance of your testimony during the break?

12 A. No, sir.

13 Q. Before the break, we were discussing
14 Figure 16 in Exhibit 1047.

15 Do you recall that?

16 A. I do, yes, sir.

17 Q. And it's your opinion that Figure 16, along
18 with its description, supports a capsule that's free
19 of a filter in the cavity; is that right?

20 A. Yes, sir, I did say taken together. That was
21 my conclusion as stated here -- well, in that
22 deposition.

23 Q. In your opinion, how would the system in
24 Figure 16 brew a beverage without a filter?

25 A. I have not formed an opinion on that point.
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1 Q. What's your understanding of how -- strike
2 that.

3 In your opinion, how would the system of
4 Figure 16 prevent coffee grounds from entering the
5 final beverage product without a filter?

6 MR. PLEUNE: Object to form.

7 THE WITNESS: I have formed no opinion on
8 that matter.

9 BY MR. MCCRAW:

10 Q. Okay. More generally speaking in the coffee
11 arts, what's your understanding of how a coffee
12 capsule without a filter would be brewed in order to
13 prevent the grounds from ending up in the coffee cup?

14 MR. PLEUNE: Object to form.

15 THE WITNESS: Well, if you can give me a
16 specific example or show me a drawing of one, we can
17 discuss that, but I have not performed that analysis
18 as part of this report and I have not provided any
19 opinion as to that matter.

20 BY MR. MCCRAW:

21 Q. What's your understanding of the benefit of
22 having a capsule that is free of a filter in the
23 context of the '430 and '923 patents?

24 MR. PLEUNE: Object to form. Outside the
25 scope.

1 THE WITNESS: Likewise, I have not formed an
2 opinion on that, nor have I been asked to do that
3 analysis.

4 BY MR. MCCRAW:

5 Q. Sitting here today, are you aware of any
6 benefit to not having a filter in the capsule?

7 A. You're talking about a general hypothetical,
8 or are we talking about related to this?

9 Q. I'm talking about in the context of the '430
10 and '923 patents.

11 A. So I have not formed an opinion on that
12 matter.

13 Q. Okay. Let's turn back to Exhibit 1047 in
14 both the 502 and 485 IPRs.

15 A. Please refresh my memory on which exhibit
16 that is.

17 Q. It's the second German application, as you
18 call it.

19 A. Thank you, sir.

20 Q. So I'd like to direct you to Page 30 of the
21 document.

22 A. Okay.

23 Q. And in particular, the second paragraph on
24 that page, and it reads in part, "Such portion

25 capsules are common knowledge and are available on the
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1 market in a variety of embodiments. Since these
2 capsules are often relatively similar, it may be the
3 case that capsules are used in coffee machines for
4 which they are not suitable."

5 Do you see that?

6 A. Yes, sir, I do see that.

7 Q. What are reasons that a capsule would not be
8 suitable for a particular coffee machine?

9 A. Well, if we read the sentence beyond that, it
10 will actually tell us. "This can give rise to
11 considerable safety-related problems and/or the coffee
12 machine may be damaged."

13 Q. What if a capsule doesn't fit in the
14 machine's brewing chamber? Is that capsule suitable
15 for the coffee machine?

16 A. Are we talking about some general
17 hypothetical and not specific to this?

18 Q. In the context of the '430 and the
19 '923 patents, does a coffee capsule that does not fit
20 into the brewing chamber -- strike that. Let me ask
21 it differently.

22 In the context of the '430 and '923 patents,
23 is a coffee capsule that does not fit into the brewing
24 chamber suitable for that particular coffee machine?

25 (The witness reviewed material.)

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1 THE WITNESS: Are we talking about generally
2 if you cannot put the capsule into the machine?

3 BY MR. MCCRAW:

4 Q. In the context of the '430 and '923 patents,
5 is a coffee capsule that does not fit into the brewing
6 chamber suitable for that particular coffee machine?

7 MR. PLEUNE: Object to form.

8 (The witness further reviewed material.)

9 THE WITNESS: I'll read to you from the
10 specification of '430, which is very close to the
11 second German application passage we just read. And
12 here, I'm looking at "BACKGROUND," Column 1, starting
13 at 15. I'll give you a second if you'd like to pull
14 it up.

15 (Pause.)

16 MR. MCCRAW: Okay.

17 THE WITNESS: "Such capsules are well known
18 and are being launched onto the market in abundant
19 variety. Since these capsules are often quite
20 similar, it is possible that the manufacturer's
21 capsules" are not in a coffee machine -- "are used in
22 a coffee machine by another manufacturer, although
23 they are not suited for it. This may result in
24 significant security issues and/or the coffee machine
25 may be damaged."

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1 So at least in the context of that patent,
2 they're teaching one of the elements of suitability.

3 BY MR. MCCRAW:

4 Q. Okay. Are there any other elements of
5 suitability in the context of the '430 and '923
6 patents?

7 MR. PLEUNE: Object to form.

8 THE WITNESS: I don't recall off the top of
9 my head, but I'll be happy to sit down and read the
10 patent if you'd like me to.

11 BY MR. MCCRAW:

12 Q. I'm not asking you to read the patent cover
13 to cover, Dr. Howle. I'm just asking you to answer
14 the question. If you need to refer to the patent, you
15 should feel free.

16 (The witness further reviewed material.)

17 THE WITNESS: Yes.

18 BY MR. MCCRAW:

19 Q. What are the other elements of suitability in
20 the context of the '430 and '923 patents?

21 A. Well, here on the same column, Column 1
22 around 63, 62, "In the context of this invention"
23 individualization or "individualizing means that the
24 respective portion capsule can be assigned to a group
25 of capsules that are suitable for the coffee machine

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1 preferably."

2 Q. Right. And my question is: What are the
3 parameters in the context of the '430 and '923 patents
4 that determine whether a capsule is suitable?

5 A. I just discussed a couple of parameters, and
6 you're asking -- are you trying to connect this to
7 your earlier question about whether or not a capsule
8 would physically fit in the machine? I'm just trying
9 to understand what you're asking.

10 Q. We could talk about that if you'd like.

11 Would a capsule that does not fit in the
12 brewing chamber be suitable for the coffee machine in
13 the context of the '923 and '430 patents?

14 MR. PLEUNE: Object to the form.

15 THE WITNESS: I don't recall those patents
16 saying anything that -- saying anything about a
17 capsule that will not fit. It discusses suitability,
18 but if you're asking me if you can use a capsule that
19 does not physically fit in the machine, I don't see
20 how that's possible.

21 BY MR. MCCRAW:

22 Q. So that would not be suitable?

23 MR. PLEUNE: Object to form.

24 THE WITNESS: It could not be used in that
25 coffee machine.

1 BY MR. MCCRAW:

2 Q. So it would not be suitable?

3 A. Define "suitability," sir.

4 Q. I'm referring to your understanding of
5 suitability in the context of the '430 and
6 '923 patents.

7 MR. PLEUNE: Object to form. Asked and
8 answered.

9 THE WITNESS: My understanding, in the
10 context of these patents, of suitability is what's
11 taught here. And what you're asking about is a
12 hypothetical apart from these patents.

13 (Pause.)

14 BY MR. MCCRAW:

15 Q. Would you agree that capsules are designed to
16 be pierced in a particular location?

17 MR. PLEUNE: Object to form.

18 THE WITNESS: So you're asking me a general
19 question out of the context. Any one of these
20 specific --

21 BY MR. MCCRAW:

22 Q. I'm asking you in your understanding of the
23 coffee arts, are capsules designed to be pierced in a
24 particular location?

25 A. Well, I can't really answer that because some
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1 capsules are not pierced at all.

2 Q. Okay. I'm not asking about capsules that are
3 not pierced. I'm asking about capsules that are
4 pierced.

5 Are they designed to be pierced in a
6 particular location?

7 MR. PLEUNE: Object to form.

8 (Pause.)

9 THE WITNESS: Some are, some are not.

10 BY MR. MCCRAW:

11 Q. Okay. And for a capsule that is designed to
12 be pierced in a particular location, if the brewing
13 chamber pierced it in a different location, would that
14 capsule be suitable for a machine in the context of
15 the '430 and '923 patents?

16 MR. PLEUNE: Objection to form.

17 THE WITNESS: I don't have enough information
18 to answer that question.

19 BY MR. MCCRAW:

20 Q. Okay. Let's turn back to Exhibit 1047. That
21 is the second German application, as you call it.

22 A. Thank you.

23 Q. Does Exhibit 1047 disclose a barcode in the
24 context of the '923 and '430 patents?

25 (The witness reviewed material.)

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1 THE WITNESS: I discuss that in some detail
2 leading up to my September deposition and the report
3 that preceded that.

4 Do you have that with me? I'd like to -- or
5 with you? I'd like to refer to that.

6 BY MR. MCCRAW:

7 Q. I don't have a copy of that.

8 A. Okay.

9 Q. Sitting here today, can you tell me whether
10 or not Exhibit 1047 discloses a barcode in the context
11 of the '430 and '923 patents?

12 (The witness reviewed material.)

13 THE WITNESS: It does.

14 BY MR. MCCRAW:

15 Q. It does. Where does it disclose a barcode in
16 the context of the '430 and '923 patents?

17 A. Page 33, Line 7, at least. I'll read that if
18 you'd like.

19 Q. So just to be clear, you're referring to
20 Page 33, Lines 6 and 7 that says, "The print is
21 preferably a barcode, a logo, or a repeat pattern"; is
22 that right?

23 A. Yes, sir, that's at least one location in
24 this document that discusses barcode.

25 Q. And that's a disclosure of a barcode in the
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1 context of the '430 and '923 patents?

2 MR. PLEUNE: Object to form.

3 (The witness reviewed material.)

4 THE WITNESS: It is a disclosure of a
5 barcode.

6 BY MR. MCCRAW:

7 Q. Is that a "yes" to my question?

8 A. I'm confused about what you mean by "in the
9 context of these other two patents." So that's why
10 I'm answering it that way.

11 Q. Well, those patents claim priority to this
12 document; right?

13 A. That is true, yes, sir.

14 Q. Okay. So -- and also, you have analyzed the
15 '430 and '923 patents in forming your opinions in this
16 matter; right?

17 A. I have, yes, sir.

18 Q. Okay. So my question for you is: Is the
19 statement "The print is previous probably a barcode, a
20 logo, or a repeat pattern" a disclosure of a barcode
21 in the context of the '430 and '923 patents?

22 (The witness reviewed material.)

23 THE WITNESS: That is part of a disclosure of
24 a barcode in the context of the '430 and '923 patents.

25 BY MR. MCCRAW:

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1 Q. Meaning that there's other disclosures of a
2 barcode in the '430 and '923 patents?

3 MR. PLEUNE: Object to form.

4 THE WITNESS: You were asking me to analyze
5 the second German application in the context of those
6 patents, but then you just asked me about the patents.
7 So I'm confused about which you're --

8 BY MR. MCCRAW:

9 Q. Sorry. Maybe I'm confused with your answer.
10 I'm just trying to understand when you say
11 that it's part of a disclosure --

12 A. Yes, sir.

13 Q. -- you mean there's other disclosures in
14 Exhibit 1047 as well?

15 A. There are other discussions of barcode in
16 1047, yes, sir.

17 Q. What are the other discussions?

18 A. Without the benefit of my previous report, I
19 can at least point you to Page 38, beginning at 10 --
20 Line 10, and this refers to Figure 2 of that same
21 exhibit.

22 Q. Uh-huh.

23 A. Figure 2 shows a further embodiment of the
24 portion capsule according to the intention. "In the
25 present case the capsule has a barcode in the region

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1 of the upper side of the membrane. This barcode can
2 be printed on by material removal or can be produced
3 by optically detectible means, for example, florescent
4 means which are present in the sheet material. As an
5 alternative, appropriate metal rings may be part of
6 the sheet material or applied to the sheet material."

7 Then it goes on, "The regions of the barcode
8 may" be consistent -- "consist of thermomagnetic
9 material as an alternative. It is possible as
10 symbolized by arrow 15 of that figure, for the barcode
11 to be provided on the side of the peripheral region of
12 the basic element which is directed away from the
13 membrane. This barcode is read by detector 13, for
14 example, in an insertion shaft. The barcode
15 constitutes the identifier according to the
16 invention."

17 And there could be others in there. Given
18 time to scan the document more thoroughly, I could
19 read those to you as well.

20 Q. Understood. Thank you, Dr. Howle.

21 So just so I understand, is the paragraph you
22 just read a disclosure of a barcode in the context of
23 the '430 and '923 patents?

24 MR. PLEUNE: Object to form.

25 MR. MCCRAW: Let me ask that differently.

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1 Q. Does the paragraph you just read disclose a
2 barcode in the context of the '430 and '923 patents?

3 A. It discusses it, but not being a lawyer, I'm
4 wondering if "disclosed" is a certain legal term,
5 which I'm not understanding how that would be applied
6 here. It discusses it. The barcode is in that
7 paragraph that I read.

8 (The witness reviewed material.)

9 THE WITNESS: To my recollection, there's at
10 least one other area in here where barcode is
11 discussed.

12 (The witness further reviewed material.)

13 THE WITNESS: I do recall I added that extra
14 bit in my declaration, previous declaration.

15 BY MR. MCCRAW:

16 Q. What are you referring to when you say,
17 "extra bit in my declaration"?

18 THE WITNESS: I'm trying to find it.

19 (The witness reviewed the document.)

20 THE WITNESS: I do recall there's another
21 passage in here. I'd have to sit down and have time
22 to properly read this in order to be able to come up
23 with that off the top of my head, not having the
24 benefit of my earlier declaration.

25 BY MR. MCCRAW:

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1 Q. Let me ask, I guess, something different.

2 So if I understand correctly, it is your
3 opinion that the second German application,
4 Exhibit 1047, provides written support for the
5 '430 patent claims; is that right?

6 A. As long as -- as long as the figures are a
7 part of that written support --

8 Q. Okay.

9 A. -- in addition to that written support.

10 Q. So it's your opinion that Exhibit 10- --
11 strike that.

12 It's your opinion that Exhibit 1047 discloses
13 a barcode in the context of the '430 claims; right?

14 A. I have just said that it discusses a barcode,
15 but "disclose" is a particular legal term, and as I
16 mentioned, I'm not a lawyer.

17 Q. Okay.

18 A. But as I have testified, reading this
19 application I find support for the claims of the two
20 patents in question.

21 Q. And one of the claim terms in the '430 patent
22 is the term "barcode"; correct?

23 A. That is a claim element in -- which patent
24 did you say? They're in both, yes.

25 Q. And it's your opinion that the second German
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1 application provides support for that term?

2 A. Yes, sir, I have so testified.

3 Q. Okay. What's your understanding of the word
4 "residue" in the context of coffee systems?

5 A. Can you point me to where that is discussed,
6 please?

7 Q. I'm just asking you more generally in the
8 coffee arts, and as your experience as a purported
9 expert, what you understand "residue" to mean.

10 A. Well, in a very broad sense, residue can be a
11 solid left over after the brewing process. I have not
12 provided an opinion on anything having to do with
13 residue.

14 MR. MCCRAW: I'd like to direct you to the
15 '430 patent, and I will tell you where in just a
16 moment.

17 (Pause.)

18 BY MR. MCCRAW:

19 Q. So let's go to claim 7. It's in Columns 13
20 and 14 of the '430 patent, Exhibit 1001 in the '485
21 proceeding.

22 And I would like to direct you in Claim 7 to
23 iii that is in Column 14, Row 17, and that recites, "A
24 side wall having indentations."

25 Do you see that?

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1 A. Yes, sir. I see that.

2 Q. Did K-Fee invent a capsule with side walls
3 having indentations?

4 THE WITNESS: If you'd just give me a second,
5 I'd like to read the entire claim, if I may.

6 MR. MCCRAW: Sure.

7 (The witness reviewed the document.)

8 THE WITNESS: Okay. I've read that.

9 So if I remember your question, you asked me
10 if K-Fee invented a side wall with indentations; is
11 that right?

12 BY MR. MCCRAW:

13 Q. That's right.

14 A. Well, in the context of this patent, they did
15 (indicating).

16 Q. Was K-Fee the first -- strike that.

17 Was Mark Kruger the first inventor to invent
18 a coffee capsule with indentations on the side wall?

19 MR. PLEUNE: Object to form.

20 THE WITNESS: "To invent a coffee capsule"?
21 So here, you're asking specific to this patent. He
22 certainly invented this patent. So he was the first
23 to invent the invention in this patent (indicating).

24 BY MR. MCCRAW:

25 Q. Not quite my question.

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1 I'm asking, more generally, in the coffee
2 arts, did Mark Kruger invent a coffee capsule with
3 side walls having indentations?

4 MR. PLEUNE: Objection to form. Asked and
5 answered.

6 THE WITNESS: Well, you have a couple of
7 claim terms there.

8 You have side wall, and you have
9 indentations. So in order to apply those claims, I
10 would have to read the entirety of 7, in this case,
11 since that's what we're talking about, on a device
12 that you might claim would predate Kruger. And I've
13 mentioned already that Mr. Kruger invented this
14 capsule. So in the case of the context of Claim 7, he
15 was the first.

16 BY MR. MCCRAW:

17 Q. My question -- go ahead. I'm sorry. I
18 didn't mean to interrupt.

19 A. If you're asking me about geometries that
20 have something that might be called a side wall with
21 indentations, there are other things out there, but
22 not in the context of this patent.

23 MR. MCCRAW: I'd like to introduce what has
24 been previously marked as Exhibit 1046 in both the 502
25 and 485 IPRs, and this is the German application dated

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1 July 22, 2010.

2 (Previously marked Exhibit 1046 was made
3 available to the witness.)

4 BY MR. MCCRAW:

5 Q. Dr. Howle, you may refer to that as "the
6 first German application."

7 A. Thank you. I was about to ask that.

8 Just to be clear, Exhibit 1046; is that
9 right? I'm just trying to make sure I'm looking at
10 the right one.

11 Q. 1046 is the one I'm asking you about, yes.
12 Thank you.

13 A. Okay. Thank you.

14 MR. MCCRAW: Just take a moment to review the
15 document.

16 (The witness reviewed material.)

17 THE WITNESS: All right.

18 BY MR. MCCRAW:

19 Q. So, Dr. Howle, does Exhibit 1046 disclose one
20 common brewing chamber among the embodiments?

21 A. I have not formed an opinion on that matter.

22 Q. Sitting here today, can you tell me whether
23 Exhibit 1046 discloses one common brewing chamber
24 across the embodiments?

25 A. Sitting here today, I would need adequate
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1 time to actually review this and supporting documents
2 to be able to form that opinion. So I have not formed
3 an opinion on that matter.

4 MR. MCCRAW: Would now be a good time to
5 break for lunch?

6 MR. PLEUNE: Sure.

7 (A recess was taken from 12:31 p.m.
8 to 1:22 p.m.)

9 MR. MCCRAW: All right. Back on.

10 BY MR. MCCRAW:

11 Q. Welcome back, Dr. Howle.

12 A. Thank you.

13 Q. Did you speak with your counsel about the
14 substance of your testimony during the break?

15 A. No.

16 Q. Let's go to the '923 patent, Exhibit 1001, in
17 the '502 IPR. I'd like to direct you to Claim 7 in
18 Column 13.

19 And in particular, the limitation which is
20 Column 13, Lines 17 through 19. ... "the grooves in
21 the cavity generate turbulence of water in the
22 cavity."

23 Do you see that?

24 A. Yes, I do see that.

25 Q. Do the claims require water to exit the
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1 capsule under turbulence?

2 (The witness reviewed material.)

3 THE WITNESS: There's no discussion of the
4 exiting of that water in that claim.

5 BY MR. MCCRAW:

6 Q. Where does the '923 patent provide support
7 for the claim limitation generating turbulence in the
8 cavity?

9 (The witness further reviewed material.)

10 THE WITNESS: Okay. So you're asking me
11 where in the '923 there is support for turbulence; is
12 that right?

13 BY MR. MCCRAW:

14 Q. Correct.

15 A. Well, first of all, in the Claim 7 that we
16 just read, "The single-serve capsule according to
17 claim 1, wherein the cavity has grooves defined
18 between the ribs, and the grooves in the cavity
19 generate turbulence of water in the cavity."

20 In addition to that -- I just found it.

21 THE WITNESS: One second. Let me find it
22 again.

23 (The witness reviewed material.)

24 THE WITNESS: All right. So now I'm looking
25 at Column 4 starting around 47. The sentence reads,

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1 "Another advantage of using a plurality of grooves is
2 that the stream of extraction liquid, which flows
3 along the base element in the cavity, can be optimized
4 by choosing a grooves' structure that is able, for
5 example, to generate on the one hand a better or
6 stronger turbulence in the obstruction liquid or on
7 the other hand more uniform (laminar) flow of the
8 extraction liquid, in the wall region." That's one
9 example.

10 I don't recall, off the top of my head, if
11 there are others, but we can continue if you'd like.

12 BY MR. MCCRAW:

13 Q. That's fine.

14 Does the '923 patent specification reference
15 the direction of the fluid in the cavity as a result
16 of the grooves?

17 (The witness further reviewed material.)

18 THE WITNESS: Well, here generally, it says
19 that the flow can be optimized by choosing the
20 grooves' structure, and I think a person of ordinary
21 skill in the arts would know that part of that
22 optimization could be the orientation of the grooves
23 and the relative flow between -- or the relative
24 velocity or velocity factor between the flow vector
25 and the grooves.

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1 BY MR. MCCRAW:

2 Q. And let's stick with the passage that you
3 referenced in Column 4, Lines 47 to 54, and I want to
4 ask you about the end of that sentence that says --
5 well, I'll just read the whole sentence from the
6 start. "Another advantage of using a plurality of
7 grooves is that the stream of the extraction liquid,
8 which flows along the base element in the cavity, can
9 be optimized by choosing a grooves' structure that is
10 able, for example, to generate on the one hand a
11 better or stronger turbulence in the extraction liquid
12 or on the other hand a more uniform (laminar) flow of
13 the extraction liquid, in the wall region."

14 Do you see that?

15 A. Yes, sir.

16 Q. So the '923 patent also talks about
17 generating a more laminar flow with grooves as well;
18 is that right?

19 A. It says that the grooves can be chosen such
20 that you can get either turbulent or laminar flow.

21 Q. Does the '923 patent explain how to configure
22 the grooves for turbulent versus laminar flow?

23 A. No, it doesn't explain how to do that, but
24 that would be well within the capabilities of someone
25 who's skilled in the arts -- or the art, sorry.

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1 Q. What would be the advantages of generating
2 turbulent flow in the capsule cavity?

3 A. Well, if we keep with that same passage from
4 the patent, stronger turbulence in the extraction
5 liquid.

6 (The witness reviewed material.)

7 THE WITNESS: And then later, I'm reading at
8 about 56, same column, 4, 56. "A stronger turbulence
9 compared to one known in the state-of-the-art has the
10 advantage that no unintended and casual main streams
11 are formed in the raw materials."

12 And then later, "Thus the extraction process
13 is much more efficient and can be controlled more
14 precisely and reproducibly."

15 BY MR. MCCRAW:

16 Q. Okay. Did you conduct any testing to
17 determine whether the grooves in the '932 patent
18 generate turbulence?

19 A. Physical testing?

20 Q. Yes.

21 A. I did not. There was no analysis provided to
22 me. So there was nothing to rebut.

23 MR. MCCRAW: Okay. I'd like to introduce --

24 Q. Oh. Go ahead.

25 A. I said physical testing. I did not provide
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1 any physical testing.

2 Q. Did you do any other form of testing?

3 A. Not with the grooves, no. I was looking at
4 pore Reynolds number.

5 (The Reporter requested clarification.)

6 THE WITNESS: Pore Reynolds number, p-o-r-e.

7 BY MR. MCCRAW:

8 Q. You were looking at pore Reynolds number in
9 connection with what?

10 A. With whether or not turbulence would be
11 generated. I did not provide that in my report.

12 Q. Did you conduct an analysis of the
13 '923 patent as to whether the pore Reynolds number
14 would demonstrate turbulence?

15 A. No, sir. I was simply looking at the
16 conclusory result that Mr. Jobin had in his
17 declaration where he just said it outright that
18 grooves create turbulence, and that could not be
19 supported by this blanket, outright statement.

20 MR. MCCRAW: I'd like to introduce what has
21 been previously marked as Exhibit 1008 in both the 502
22 and 485 IPRs. This is U.S. Publication
23 No. 20120269933 to Rapparini.

24 (Previously marked Exhibit 1008 was made
25 available to the witness.)

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1 BY MR. MCCRAW:

2 Q. Have you seen this document before,
3 Dr. Howle?

4 A. Yes, sir, I have.

5 Q. I'd like to direct you to Paragraphs 9
6 through 11 in the Rapparini reference.

7 MR. PLEUNE: Object to the form to the extent
8 it's outside the scope.

9 (The witness reviewed material.)

10 BY MR. MCCRAW:

11 Q. My first question for you, Dr. Howle is: Is
12 it correct that these paragraphs are in the "Summary"
13 section of the Rapparini patent?

14 A. Yes, sir.

15 Q. Okay. Do these paragraphs apply to any
16 particular embodiment in Rapparini?

17 (The witness reviewed material.)

18 THE WITNESS: Well, each one of these three
19 paragraphs start with the words, "According to a
20 further embodiment of the present invention."

21 BY MR. MCCRAW:

22 Q. There's no figures associated with any of
23 these paragraphs, is there?

24 A. Those paragraphs do not cite to a particular
25 figure.

1 MR. MCCRAW: I'd like to introduce what's
2 been previously marked as 1004 in the 502 and 485
3 IPRs. This is U.S. Publication No. 20100239734 to
4 Yoakim.

5 (Previously marked Exhibit 1004 was made
6 available to the witness.)

7 MR. MCCRAW: And I'd like to direct you to
8 Figure 61 of Yoakim, which is on Page 34 of the
9 document.

10 (Pause.)

11 BY MR. MCCRAW:

12 Q. And my first question for you, Dr. Howle, is
13 what is Element 231?

14 THE WITNESS: Just bear with me while I look
15 that up.

16 MR. MCCRAW: Sure.

17 (The witness reviewed material.)

18 THE WITNESS: I was just trying to find that.
19 I apologize.

20 MR. MCCRAW: That's okay.

21 (The witness reviewed material.)

22 BY MR. MCCRAW:

23 Q. And Dr. Howle, it's been a few minutes. So
24 I'm not trying to make this a memory test.

25 A. Uh-huh.

1 Q. To the extent you're trying to find 231 in
2 Yoakim, one place you can find it is Paragraph 525.

3 A. Thank you. That's all I was trying to do. I
4 apologize.

5 Q. That's all right.

6 A. "525," you said; correct?

7 Q. Yes.

8 (The witness further reviewed materials.)

9 THE WITNESS: "Sensing device" is the term
10 they use. I apologize for my delay.

11 BY MR. MCCRAW:

12 Q. Sure.

13 And that's the sensing device that would read
14 the barcode in Figure 61; is that right?

15 (The witness further reviewed material.)

16 THE WITNESS: Yoakim actually refers to that
17 as "an identification means."

18 BY MR. MCCRAW:

19 Q. ID4?

20 A. Yes, sir.

21 Q. Okay. And the sensing device 231 would read
22 the identification means ID4?

23 THE WITNESS: Yeah. Here. Let me read from
24 525, the passage that pertains to that.

25 Q. Sure.

1 A. "The recognition means can be any mechanical,
2 optical, magnetic, or radio frequency recognition
3 means capable of delivering information to the brewing
4 device via sensing mean or sensing device 231 as to
5 which type of capsule is inserted in the device."

6 Q. Okay. Now, going back to Figure 61, and I
7 don't think these are labeled in Figure 61, but what's
8 your understanding of the two triangles pointing
9 downward into the capsule on each side?

10 (The witness reviewed material.)

11 THE WITNESS: From that drawing, I would
12 understand, particularly when additionally consulting
13 Figure 6, and now looking at Paragraph 440, and I'll
14 just read the sentence about halfway down there.

15 "At the same time several liquid outlets are
16 pierced at the periphery of the ceiling foil by outlet
17 piercing members 151, 152, 3, and 4."

18 So I would then look to 61, which was your
19 original question, and I would infer from that
20 together that those are what they're calling "outlet
21 piercing members."

22 BY MR. MCCRAW:

23 Q. Okay. And those piercing members would
24 pierce the membrane of the capsule when the chamber is
25 closed; is that right?

1 THE WITNESS: I'm just searching the
2 language. I'm looking to confirm that.

3 (The witness reviewed material.)

4 THE WITNESS: Insofar that that upper surface
5 is a membrane, it would pierce that.

6 BY MR. MCCRAW:

7 Q. It would pierce it when the chamber is
8 closed; is that right?

9 A. That's right.

10 Q. What do you understand Element 229 in
11 Figure 61 to be?

12 MR. PLEUNE: What was the element number? I
13 apologize.

14 MR. MCCRAW: 229.

15 (The witness reviewed material.)

16 THE WITNESS: On 523 that's referred to as an
17 "outlet."

18 BY MR. MCCRAW:

19 Q. Okay. So that's the location where the
20 liquid exits the chamber; is that right?

21 MR. PLEUNE: Object to form.

22 THE WITNESS: That is the direction in which
23 the fluid flows after it has been extracted and has
24 gone through the coffee or other brewing material.

25 BY MR. MCCRAW:

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1 Q. What's your understanding of when the
2 identification means is sensed by the sensing device
3 in Figure 61 during the brewing process?

4 (The witness reviewed material.)

5 THE WITNESS: The figure I was trying to find
6 earlier.

7 (The witness further reviewed material.)

8 THE WITNESS: And the question was when is --
9 I'm sorry. Could you repeat the question, please?

10 MR. MCCRAW: Could you read the question
11 back, please?

12 (Record read.)

13 THE WITNESS: It would be sensed at the
14 beginning of the brewing process.

15 BY MR. MCCRAW:

16 Q. Okay. So it would be sensed at the beginning
17 of the brewing process after the chamber is closed; is
18 that right?

19 A. I believe that's accurate. After the chamber
20 is closed, it would have to be placed in proximity to
21 the capsule.

22 MR. MCCRAW: Let's take a short break.

23 (A recess was taken from 2:01 p.m.
24 to 2:07 p.m.)

25 MR. MCCRAW: We have no further questions.
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1 MR. PLEUNE: Okay. We're going to go talk
2 for a minute. Give us just a few minutes.

3 (A recess was taken from 2:11 p.m.
4 to 2:11 p.m.)
5

6 EXAMINATION

7 BY MR. PLEUNE:

8 Q. Dr. Howle, I would like you to refer to
9 Exhibit 1008, which is the Rapparini reference that
10 you were asked about by Mr. "McGraw."

11 Do you have that?

12 A. Yes, sir, I have that.

13 Q. In particular, Mr. McGraw asked you about
14 Paragraphs 9 through 11 of Exhibit 1008; is that
15 right?

16 A. Let me just refresh my memory, if I might.

17 Yes, sir.

18 Q. I'd like you to turn to Figure 6BIS of
19 Exhibit 1008.

20 A. Okay. 6BIS. All right.

21 Q. And there is a line in the middle of this
22 capsule in Figure 6BIS that's going from the left to
23 right.

24 Can you tell me what that is?

25 MR. MCCRAW: Objection. Outside the scope of
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1 the cross. Objection. Leading. Object to form.

2 THE WITNESS: So you're talking about the
3 line that's near the terminus of what's called out as
4 "4"; is that right?

5 BY MR. PLEUNE:

6 Q. I think, yeah, that's correct.

7 A. Okay. So looking at this as a person of
8 ordinary skill, I would call that a parting line,
9 which could be used in a molding process, or with
10 computer-aided design, it could also denote an area
11 where the curvature changed from simple to compound
12 curvature.

13 So, for example, above 4, there's a simple,
14 single curvature, and the as movable direction, and
15 below that there's a compound curvature both in the as
16 movable and the axial directions. And so that would
17 mean to me that that's an area where there is a change
18 in geometry that would delineate something like 5 from
19 the upper region 4.

20 Q. You mentioned the "upper region." What would
21 you consider to be the bottom region of the capsule
22 depicted in Figure 6BIS?

23 MR. MCCRAW: Objection. Outside the scope of
24 the cross. Leading. Object to form.

25 THE WITNESS: I believe 5 is called a bottom
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1 region exactly. Let me just confirm that.

2 (The witness reviewed material.)

3 THE WITNESS: Yeah. So here -- I'm looking
4 at Paragraph 54, and it says the bottom 5, and further
5 in that paragraph, in particular even the narrow
6 bottom region 5 of the cup-shaped container can be
7 provided with ribs 4 and so forth.

8 So that would be a bottom region.

9 BY MR. PLEUNE:

10 Q. And how does the bottom region relate to the
11 parting line, if at all?

12 MR. MCCRAW: Objection. Outside the scope of
13 the cross. Leading. Object to form.

14 THE WITNESS: Looking at this as a person of
15 ordinary skill, that parting line, as I've called it,
16 would delineate the difference between the bottom
17 region and upper region.

18 BY MR. PLEUNE:

19 Q. You can put Exhibit 1008 aside, Dr. Howle.

20 And if you could refer to Exhibit 2017 from
21 the 502 IPR.

22 A. 502 IPR. I'm sorry.

23 Q. Is there an exhibit to Exhibit 2017 of the
24 502 IPR?

25 A. There at the back, yes, sir, that's my CV. IPR2023-00502
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1 Q. Okay. Now, in response to a question from
2 Mr. McGraw earlier today, you referenced your 40 years
3 of experience as an engineer; is that right?

4 A. Yes, sir, I did.

5 Q. Are there any particular experiences that you
6 had, as an engineer in the past 40 years, that are
7 particularly relevant to the work you've done with
8 respect to the 502 and the 485 IPRs?

9 MR. PLEUNE: Objection. Leading.

10 MR. MCCRAW: Objection. Leading. Outside
11 the scope of the cross. Object to form.

12 THE WITNESS: Yes, sir. In fact, much of my
13 history I have directly relevant to these particular
14 cases.

15 For example, let me go through some of these.
16 I've served as a consulting engineer for a number of
17 companies in the medical field, for example, Bracco
18 Diagnostics is one. EZM Corporation is another.
19 Mallinckrodt --

20 (The Reporter requested clarification.)

21 THE WITNESS: And then Mallinckrodt, and
22 also, in connection with other consulting work, Label
23 Florsheim. And in much of that work I did work that's
24 directly relevant to these cases. For example, I used
25 pumps. I used heaters. I've designed pumps. IPR2023-00502

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1 designed heaters, and much of that work I did well
2 before 2000. So quite a bit of experience there.

3 In fact, for some of the work I did for
4 Bracco diagnostics and EZM I designed entire piston
5 pumps and peristaltic pumps and looked at optical
6 means for measurement. In my experience at Duke
7 University, I actually developed a shadow graphic
8 imaging technique that used a laser, methods to create
9 porous media, closely related to flow in coffee
10 grounds, yet for the first time since 1900 people have
11 been trying to do this, to try to visualize flow
12 patterns within porous media.

13 I was able to do that, publish that in
14 Nature, which is the world's premiere scientific
15 peer-reviewed journal. And I've taught graduate and
16 undergraduate levels on a number of subjects. I was
17 the lead instructor in our entire mechanical
18 engineering design sequence.

19 I also taught undergraduate and graduate
20 fluid mechanics and heat transfer at the graduate and
21 undergraduate level. And aside from that, I am a
22 licensed, professional engineer in North Carolina,
23 formerly in Maryland. I don't work in Maryland
24 anymore. So I let that license lapse.

25 And as part of the licensure process for
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1 becoming a professional engineer, it's basically a
2 five-year process. You have to take an initial exam
3 and then approve a minimum of four years of experience
4 working for -- under professional engineers so they
5 can write reference letters and then sit for the
6 financial exam.

7 I believe I became licensed in 2008, but all
8 the experience leading up to that, I had completed by
9 2000. So quite a bit. In fact, many of my
10 publications here go into methods that are applicable
11 to the cases that we're talking about today.

12 BY MR. PLEUNE:

13 Q. Just a couple real quick follow-ups on
14 that.

15 And you mentioned some products that you
16 worked on for Bracco Diagnostics and EZM.

17 When did you do that work?

18 MR. MCCRAW: Objection. Outside the scope of
19 the cross. Object to form.

20 THE WITNESS: All right. I'm going to just
21 look at my publications here because many of those
22 resulted in publications.

23 So the first with Mallinckrodt, that was in
24 the late '90's and that I was looking at ultrasound
25 contrast agents. These are synthetic phospholipids or

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1 albumin coated microbubbles that are injected into
2 patients for diagnostic imaging. So a lot of that has
3 to do with pumps and heaters, and also creation of the
4 microbubbles themselves.

5 So that would have been late '90's, and then
6 that work led into work with Bracco Diagnostics and
7 EZM, which would have been in the early 2000s. Let's
8 see if I can find it.

9 So 2002 there's at least one paper having to
10 do with that. The -- just the nature of the way that
11 work progresses in academics, you're usually funded
12 one to two years before your first publication comes
13 out. So easily by 2000, I was working with those
14 medical devices.

15 But my background, my Ph.D. is in thermal
16 fluids, and I've worked in that area since the early
17 '90's. I'm sorry. Early 1990's.

18 BY MR. PLEUNE:

19 Q. And do you believe that those products have
20 similarities to the products that are in issue in this
21 case?

22 MR. MCCRAW: Objection. Leading. Objection.
23 Outside the scope of the cross. Object to form.

24 THE WITNESS: Certainly all the disciplines
25 that go into that, the tools that we, as an engineer,

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1 used can be applied easily to one or the other.
2 Mechanical power flow pump is $M \cdot \Delta v$ whether you're
3 working with a coffee maker or an injection machine
4 similar to the medical equipment that I was working
5 with.

6 So yes. Even some of the applications are
7 directly relevant. Flow rates for the pumps, pressure
8 differences, all of that are within the parameters of
9 these various patents.

10 BY MR. PLEUNE:

11 Q. You also mentioned teaching a course in fluid
12 mechanics and heat transfer; is that right?

13 A. Yes, sir.

14 MR. MCCRAW: Objection. Outside the scope of
15 the cross. Objection. Leading.

16 BY MR. PLEUNE:

17 Q. Was that one class or was that two different
18 classes?

19 A. I've taught --

20 MR. MCCRAW: Objection.

21 THE WITNESS: Sorry.

22 MR. MCCRAW: Leading.

23 THE WITNESS: So I've taught, many different
24 times, five different classes in fluid mechanics and
25 heat transfer.

1 BY MR. PLEUNE:

2 Q. And when did you start teaching those
3 classes?

4 MR. MCCRAW: Objection. Outside the scope of
5 the cross.

6 THE WITNESS: 1993, the day after I got my
7 Ph.D.

8 BY MR. PLEUNE:

9 Q. And how long did you teach those classes?

10 MR. MCCRAW: Objection. Outside the scope of
11 the cross.

12 THE WITNESS: Until last spring.

13 BY MR. PLEUNE:

14 Q. What happened last spring?

15 A. I semi retired.

16 MR. PLEUNE: No additional questions.

17 MR. MCCRAW: Just give us a minute.

18 Let's take a quick break.

19 (A recess was taken from 2:36 p.m.
20 to 2:43 p.m.)

21 MR. MCCRAW: For the record, petitioner moves
22 to exclude all of Dr. Howle's testimony during
23 redirect regarding Rapparini and Figure 6 and
24 Figure 6BIS. He was not asked about Figure 6 or 6BIS
25 during cross-examination nor does his declaration

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1 provide any opinions on Figure 6 and Figure 6BIS in
2 Rapparini.

3 We have no further questions.

4 MR. PLEUNE: Okay. And I'll respond that we,
5 of course, disagree. Counsel asked questions about
6 Rapparini Exhibit 1008 and even specifically asked
7 questions directed to whether the summary applied to
8 all of the figures, which, of course, would include
9 6BIS.

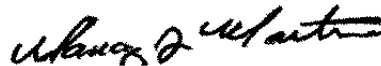
10 And so we think it is directly responsive and
11 certainly relevant to the issues that were discussed
12 today.

13 (Witness excused.)

14 (Deposition concluded at 2:43 p.m.)
15
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C E R T I F I C A T E

I do hereby certify that the aforesaid testimony was taken before me, pursuant to notice, at the time and place indicated; that said deponent was by me duly sworn to tell the truth, the whole truth, and nothing but the truth; that the testimony of said deponent was correctly recorded in machine shorthand by me and thereafter transcribed under my supervision with computer-aided transcription; that the deposition is a true and correct record of the testimony given by the witness; and that I am neither of counsel nor kin to any party in said action, nor interested in the outcome thereof.



Nancy J. Martin, RMR, CSR

Dated: February 23, 2024

(The foregoing certification of this transcript does not apply to any reproduction of the same by any means, unless under the direct control and/or supervision of the certifying shorthand reporter.)

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1 S. Benjamin Pleune, Esq.,

2 ben.pleune@alston.com

3 February 23, 2024

4 RE: Nespresso USA, Inc. v. K-Fee System GMBH

5 2/22/2024, Laurens Howle , Ph.D. (#6475564)

6 The above-referenced transcript is available for
7 review.

8 Within the applicable timeframe, the witness should
9 read the testimony to verify its accuracy. If there are
10 any changes, the witness should note those with the
11 reason, on the attached Errata Sheet.

12 The witness should sign the Acknowledgment of
13 Deponent and Errata and return to the deposing attorney.
14 Copies should be sent to all counsel, and to Veritext at
15 cs-ny@veritext.com

16 Return completed errata within 30 days from
17 receipt of testimony.

18 If the witness fails to do so within the time
19 allotted, the transcript may be used as if signed.

20
21
22 Yours,

23 Veritext Legal Solutions
24

25 IPR2023-00502
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Nespresso USA, Inc. v. K-Fee System GMBH

Laurens Howle , Ph.D. (#6475564)

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Laurens Howle , Ph.D.

Date

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Laurens Howle , Ph.D. (#6475564)

ACKNOWLEDGEMENT OF DEPONENT

I, Laurens Howle , Ph.D., do hereby declare that I have read the foregoing transcript, I have made any corrections, additions, or changes I deemed necessary as noted above to be appended hereto, and that the same is a true, correct and complete transcript of the testimony given by me.

Laurens Howle , Ph.D.

Date

*If notary is required

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_____ DAY OF _____, 20____.

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Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

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THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

VERITEXT LEGAL SOLUTIONS

COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

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

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