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Transcript of Kevin M. Keener, Ph.D., P.E.

Date: January 23, 2025

Case: Ceva Santé Animale S.A., et al. -v- Targan, Inc. (PTAB)

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WORLDWIDE COURT REPORTING & LITIGATION TECHNOLOGY

1 IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

2
3
4 BEFORE THE PATENT TRIAL AND APPEAL BOARD

5
6 Ceva Sante Animale S.A.,
7 Egg-Chick Automated Technologies S.A.S., and
8 Ceva Animal Health, LLC

9 Petitioners,

10 v.

11 Targan, Inc.,

12 Patent Owner.

13
14 Case IPR2024-00595

15 U.S. Patent No. 10,806,124

16
17
18 VIDEOCONFERENCE DEPOSITION TESTIMONY OF
19 KEVIN M. KEENER, Ph.D., P.E.
20 THURSDAY, JANUARY 23, 2025
10:06 A.M. EST

21 REPORTED BY:
22 Rebecca Klanderud, RPR, CSR
Job No. 567313

1 VIDEOCONFERENCE DEPOSITION TESTIMONY OF
2 KEVIN M. KEENER, Ph.D., P.E., Volume 1, with the
3 witness appearing remotely from New York City
4 before Rebecca Klanderud, RPR, CSR, through the
5 use of machine shorthand and realtime
6 technology, beginning at 10:06 a.m. EST and
7 ending at 12:42 p.m. EST, on Thursday, January
8 23, 2025.

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15
16 ALSO PRESENT:

17 Cristina Lai, Patent Agent

18 Enrique Casas, Video Technician

19 * * *

20 (All parties present joined remotely.)

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1 THE COURT REPORTER: Good morning,
2 everyone.

3 This is Rebecca Klanderud, the court
4 reporter for today's deposition.

5 Do counsel stipulate and agree that I
6 may administer the oath remotely, and that the
7 oath so given is valid for purposes of this
8 deposition, please?

9 Mr. Ollis?

10 MR. OLLIS: Yes, we do

11 THE COURT REPORTER: Thank you, sir.

12 Mr. Robson?

13 MR. ROBSON: Yes. We do as well.

14 THE COURT REPORTER: Thank you, sir.
15 Doctor, kindly raise your right hand.

16 (The court reporter administered the
17 oath to KEVIN M. KEENER, Ph.D., P.E.)

18 THE WITNESS: I do.

19 THE COURT REPORTER: Thank you,
20 Doctor.

21 Counsel, the witness has been sworn,
22 and you may proceed.

1 MR. OLLIS: Thank you very much.

2 KEVIN M. KEENER, Ph.D., P.E.,
3 a witness in the above-entitled matter,
4 having been first duly sworn,
5 testified on his oath as follows:

6 EXAMINATION

7 BY MR. OLLIS:

8 Q. Good morning, Dr. Keener.

9 A. Good morning.

10 Q. My name is Andrew Ollis. I'm with
11 the law firm of Oblon, McClelland, Maier &
12 Neustadt, and as you may be aware, we represent
13 the Ceva petitioners.

14 Dr. Keener, have you had your
15 deposition taken before?

16 A. I have, yes.

17 Q. Okay. So you understand that -- I
18 think it's already been made clear that there's
19 a court reporter present, and the questions that
20 are being asked and the answers that you give
21 are being taken down?

22 A. Yes.

1 Q. And you also understand that you're
2 under oath this morning?

3 A. Yes.

4 Q. Okay. You also understand that your
5 counsel may object to some of the questions that
6 I ask, but if that happens, I'll still be
7 looking for you to answer the question?

8 A. Yes.

9 Q. And if you don't understand a
10 question, please let me know, okay?

11 A. Yes.

12 Q. Otherwise, I'll assume that you
13 understood the question.

14 A. Yes.

15 Q. Is there any reason that you would
16 not be able to answer my questions truthfully
17 this morning?

18 A. No.

19 Q. Okay. Thank you.

20 MR. OLLIS: If we could just, for the
21 record, mark the deposition notice as the first
22 exhibit?

1 For the record, we'll be using
2 generally the exhibit numbers that are already
3 numbering the various papers in the IPR. I
4 don't think there's an exhibit number for the
5 deposition notice, but it's item 17, so perhaps
6 we can just mark it item 17.

7 THE EXHIBIT TECHNICIAN: Got it.

8 MR. OLLIS: I guess, if you could
9 just put it on the screen for a moment, please,
10 the front page?

11 (Exhibit 17 was marked for
12 identification.)

13 BY MR. OLLIS:

14 Q. Dr. Keener, can you see that, the top
15 part of the deposition notice there?

16 A. Yes, I can.

17 Q. Okay. And is it your understanding
18 that you're here this morning because of a
19 declaration that you submitted in an IPR number
20 202400595?

21 A. Yes. That is correct.

22 Q. Thank you.

1 Okay. Dr. Keener, do you have any
2 documents or papers with you in the room this
3 morning?

4 A. I have papers in a backpack, but
5 nothing in front of me.

6 Q. Okay.

7 MR. OLLIS: But did I understand,
8 Counsel, correctly that you have copies of Dr.
9 Keener's declaration and the related exhibits
10 from the IPR available for Dr. Keener this
11 morning?

12 MR. ROBSON: That's right, Counsel.

13 I have his declaration and any of the
14 exhibits that were filed on the docket.

15 MR. OLLIS: Okay. Thank you.

16 BY MR. OLLIS:

17 Q. Dr. Keener, did you do anything to
18 prepare for your deposition today?

19 A. Yes, I did.

20 Q. And what was that?

21 A. Reviewing the declaration, reviewing
22 the supporting documents, reviewing the

1 petitioner's petition. Yes.

2 And then -- and then reviewing and
3 discussing various aspects of those through
4 approximately 20 hours of discussions with
5 counsel and my own independent evaluation.

6 Q. Thank you.

7 You mentioned that these discussions
8 were with counsel.

9 Did you discuss, or did you have
10 discussions with anyone else other than counsel
11 in preparing for today's deposition?

12 A. No.

13 Q. Okay. And for the record, is there
14 anyone else in the room with you today other
15 than your counsel, Mr. Robson?

16 A. No, there's not.

17 Q. Thank you.

18 All right.

19 MR. OLLIS: Enrique, could we pull up
20 the Exhibit Number 2002?

21 I think that's Dr. Keener's
22 declaration cover page.

1 THE EXHIBIT TECHNICIAN: Stand by.

2 MR. ROBSON: Counsel, I'll give him
3 the hard copy.

4 MR. OLLIS: Okay.

5 (Exhibit 2002 was marked for
6 identification.)

7 BY MR. OLLIS:

8 Q. All right. Dr. Keener, do you have a
9 paper copy of your declaration now in front of
10 you?

11 A. I have it here to the side. I
12 haven't looked at it. I was waiting for the
13 electronic to come up, but I do have it, yes.

14 Q. That's fine.

15 Okay. I'll represent to you that
16 what's shared on screen is the top half of --
17 and maybe we can scroll down a little bit -- of
18 the cover page of your declaration. Hopefully,
19 that title looks familiar there, the Declaration
20 of Kevin Keener, Ph.D., P.E., In Support of
21 Patent Owner's Response Concerning U.S. Patent
22 Number 10,806,124.

1 Do you see that?

2 A. Yes, I do. And I -- that is the
3 first page of my declaration.

4 Q. Thank you.

5 MR. OLLIS: And if he could just flip
6 through briefly to the very last page?

7 Scroll up a little bit. Thank you.

8 BY MR. OLLIS:

9 Q. And at paragraph 195, at the bottom
10 there, there's indicated a date of November
11 11th, 2024, and there's a signature.

12 Is that your signature at the end of
13 the declaration?

14 A. Yes, that is.

15 Q. Okay. And did you sign this
16 declaration November 11, 2024; is that correct?

17 A. Yes. That's correct.

18 Q. All right. Thank you.

19 Dr. Keener, did you write your
20 declaration?

21 A. I did. The content of that is my --
22 yeah, my, you know, evaluation of -- of the --

1 you know, the tasks that I was asked to perform.

2 Q. Okay.

3 A. Yes.

4 Q. Did anyone else work on the
5 declaration with you?

6 A. The figures -- I had the figures
7 made. So the figures that are in here were
8 actually made for me at my request, and there
9 was some -- you know, some aspects that were --
10 were based upon discussions with the attorneys
11 in terms -- some of the legal aspects, and so
12 those are noted where I say "I understand."

13 So there's various background aspects
14 of, you know, the legal standards and things
15 like that that I had summarized from those
16 discussions.

17 Q. Okay. And -- thank you.

18 Did you consult with anyone else in
19 preparing your declaration other than the
20 attorneys?

21 A. No, I did not.

22 Q. Did you consult with Dr. Karam, if

1 you're familiar with Dr. Karam, in preparing
2 your declaration?

3 A. No, I did not.

4 Q. Okay. Approximately how much time
5 did you spend preparing your declaration?

6 A. It would be approximately 25, 30
7 hours.

8 Q. Okay. Since you signed your
9 declaration on November 11th, last fall, have
10 there been any changes to the opinions that you
11 offered in your declaration?

12 A. No. My opinions as they're -- as
13 they're written there remain.

14 Q. Okay. Are there any corrections that
15 you've become aware of to be made to your
16 declaration since November 11th?

17 A. There was nothing significant. There
18 was a -- there was a couple of typos, but
19 nothing -- nothing more.

20 Q. Okay. As in typos, like, spelling
21 sorts of typos?

22 A. Yeah. There was -- there was one,

1 for example, where I had POSTA instead of
2 POSITA.

3 Q. Okay. But nothing substantive as --
4 to your understanding?

5 A. Nothing substantive, that's correct.

6 Q. Thank you.

7 Now, Dr. Keener, I'd like to just
8 talk a little bit about some of your background.

9 Am I correct in understanding that
10 you have testified as an expert in other
11 proceedings before this one?

12 A. That is correct. Yes.

13 Q. And approximately how many
14 proceedings have you served as a testifying
15 expert?

16 A. Would that refer to deposition or
17 trial or both?

18 Q. Both.

19 A. Probably approximately 20 times.

20 Q. Okay. Now, could you describe
21 generally the types of proceedings that you've
22 been involved in as a testifying expert?

1 A. Well, my technical background is in
2 design of technology applied to food,
3 bioprocessing, agricultural engineering, and so
4 many of those testimonies that I've previously
5 given were regarding either technology or
6 equipment or processes. And some of those
7 aspects also extended into food safety and
8 regulatory issues in terms of, you know,
9 regulatory compliance and things, but a majority
10 of those were focused on, you know, equipment,
11 failure of equipment, you know, failure in
12 design of equipment, the products produced on
13 various pieces of equipment not meeting customer
14 or the contractor specifications, and so on.

15 Q. Okay. Thank you.

16 Did any of those prior proceedings
17 involve equipment or technology related to
18 poultry?

19 A. Yes, they did.

20 Q. And what -- can you elaborate on what
21 those were?

22 A. Well, there was -- there was many of

1 those. One of those dealt with pasteurization
2 of shell eggs.

3 Q. Uh-huh.

4 A. One of those dealt with making
5 chicken nuggets without bones.

6 There was one relating to poultry
7 processing and the amount of water that's used.

8 One related to processing of meat and
9 poultry and the necessary regulatory
10 requirements for workers. That's referred to as
11 donning and doffing.

12 Q. Uh-huh.

13 A. There's probably others. Those are
14 the ones that come to mind.

15 Q. Okay. Thank you.

16 Now, just on the third one -- if I
17 could follow up -- you mentioned is poultry
18 processing without water being used.

19 What do you mean by poultry
20 processing, or what were you referring to?

21 MR. ROBSON: Objection, form.

22 THE WITNESS: Well, maybe -- maybe it

1 didn't come through clearly; the use of water in
2 poultry processing. So I was characterizing,
3 previously, I've done research. I've worked
4 with companies on water conservation practices.

5 And so that particular case was
6 litigation around the amount of water that was
7 being used in the processing of poultry to
8 produce various products, from a whole bird
9 carcass to further processed products that would
10 then include things like chicken nuggets,
11 chicken wings, boneless, skinless breasts, and
12 so on.

13 BY MR. OLLIS:

14 Q. Okay. Thank you.

15 Now, of these 20 or approximately 20
16 proceedings that you have served as a testifying
17 expert in previously, were some of those
18 involving patents?

19 A. Some of those did involve patents,
20 yes.

21 Q. And approximately how many of those
22 proceedings involved patents?

1 A. Either patents in federal court or
2 IPRs I would say were -- so, again, you know,
3 this is going back 20 some years. I would say
4 five of those, so 20, 25 percent.

5 Q. And for those five, do you -- are you
6 able to describe each one briefly for me?

7 A. Several of them I recall.

8 Q. Okay.

9 A. So -- so one was involved with the
10 determination of -- of smoke or smokeless
11 flavoring, and it had to do with smokeless
12 versus odorless. So that was a technology a
13 company had, and there was another company that
14 was also claiming that technology.

15 Q. Okay.

16 A. There was several related to oil
17 fryers and the design of oil fryers from a
18 monitoring standpoint, quality standpoint, oil
19 quality sensing.

20 There was one related to dairy and
21 the aseptic processing of dairy and the use of
22 certain sanitizers or, you know, the

1 determination of the use of a specific chemistry
2 to it being used as a sanitizer. There was two
3 companies that took claim or ownership of that
4 particular chemistry formulation.

5 Those are the ones that I can recall
6 right now.

7 Q. Okay. Thank you.

8 For the prior proceedings where
9 you've been retained as an expert, did any of
10 them involve poultry hatcheries?

11 A. Several of the companies had poultry
12 hatcheries, but the litigation was not related
13 to the poultry hatcheries.

14 Q. Okay. Thank you.

15 All right. Dr. Keener, could you
16 briefly just let me know your education after
17 high school, the degrees you obtained?

18 A. Yes. So after high school, I
19 obtained a bachelor's degree in agricultural
20 engineering from The Ohio State University.

21 I obtained a master's degree in
22 agricultural engineering from The Ohio State

1 University.

2 I obtained a Ph.D. in food
3 engineering from Purdue University.

4 Q. Thank you.

5 During your studies at Ohio State and
6 Purdue, did you study any aspects of poultry
7 processing generally?

8 A. My work with poultry processing
9 started shortly thereafter as part of my -- my
10 faculty position. So I had an initial faculty
11 position at Purdue in 1996, and I was teaching
12 engineering classes there to senior level and
13 graduate students, and then I took a position in
14 North Carolina, North Carolina State University.
15 And as part of my responsibilities as a faculty
16 member, the poultry industry in North Carolina
17 is a -- at that time, it was about \$2 billion of
18 economic value to the state, and so I was tasked
19 to provide engineering assistance to those
20 companies in cooperation with others within --
21 there was a department of poultry science at
22 North Carolina State that I worked closely with

1 in regards to looking at new technologies,
2 processes, and product deficiencies, production
3 practices, and so on.

4 Q. Okay. Thank you.

5 And, again, to confirm, though, your
6 work with poultry in various capacities started
7 after your education had been completed?

8 Is that correct?

9 A. A majority. I mean, I would say
10 essentially. For my Ph.D., I did some work with
11 poultry products. My Ph.D. focused on
12 developing a non-evasive methodology for
13 characterizing composition of food and so -- so
14 part of the testing that I did was actually
15 looking at measuring things like moisture
16 content in poultry, looking at composition of
17 eggs, some of those kinds of measurements as
18 part of that Ph.D. effort, but most of the Ph.D.
19 focused on fruit and vegetables characterization
20 and ripeness.

21 Q. Thank you.

22 Now, you mentioned some work that you

1 did in North Carolina. Let me just see.

2 MR. OLLIS: Enrique, could we jump
3 to -- I think it's -- actually, it's a different
4 exhibit now.

5 Let's -- if we could pull up exhibit
6 2007?

7 THE EXHIBIT TECHNICIAN: Stand by.

8 (Exhibit 2007 was marked for
9 identification.)

10 BY MR. OLLIS:

11 Q. And, Dr. Keener, I believe this is
12 your CV that was attached or provided with your
13 declaration.

14 Do you have 2000- -- Exhibit 2007 in
15 front of you now, a paper copy?

16 A. I do here, yes. It was just
17 provided. Yes.

18 Q. Okay. And is this the -- your resume
19 or CV that was provided in association with your
20 declaration in this proceeding?

21 A. That's correct. This was current as
22 of November 10th, 2024.

1 Q. Okay. Thank you.

2 MR. OLLIS: And if we could go to the
3 bottom of page nine on this one?

4 There we go.

5 If you could zoom in?

6 So I think it's a little bit of a
7 small font. If we could zoom it in just a
8 little bit?

9 Thank you.

10 BY MR. OLLIS:

11 Q. Dr. Keener, can you see that on the
12 screen or at least in front of you personally?

13 That bottom section --

14 MR. ROBSON: He has it.

15 BY MR. OLLIS:

16 Q. -- has the heading, it says Poultry
17 Hatcheries.

18 A. Yes. I can see that on the screen.

19 Q. Okay. Thank you.

20 And it says -- I'm going to read the
21 first part of it. It says: "Dr. Keener has
22 been working with NC poultry hatcheries in 1999

1 to improve sanitation practices and evaluate new
2 sanitation technologies to reduce pathogens and
3 spoilage bacteria during egg hatching and chick
4 sorting."

5 Do you see that?

6 A. Yes.

7 Q. What were the sanitation practices
8 that you were working on and evaluating at that
9 time?

10 A. Well, there were several different
11 approaches. So aerosolization of things like
12 ozone, looking at various types of chemistries
13 for formulations.

14 So at that time, there was a
15 chemical. It's called peracetic acid. It's
16 quite common now in the food industry, but there
17 was -- there was work we were doing to evaluate
18 the appropriateness of that on the fertilized
19 eggs specifically to see whether there was any
20 impact on hatching rates, either positive or
21 negative.

22 And then, additionally, there was

1 later work that I had done that isn't included
2 here. You know, a few years after this, I
3 invented the technology it's called atmospheric
4 cold plasma where you can take air as an example
5 with some humidity, and you can create a
6 reactive chemistry. And so there was some
7 further work we did later where we actually
8 applied that also, but this would be done or
9 this work was done in hatching cabinets.

10 Q. Sorry. Just to clarify, when you say
11 "this work was done in hatching cabinets," is
12 that the atmospheric cold plasma work that you
13 did later?

14 A. Well, both, both. Both of these were
15 done -- so the chicks -- the chicks themselves,
16 there's cabinets they use to control the
17 temperature and the humidity for hatching. And
18 so one of the challenges is that during those
19 times of embryo development, those conditions
20 are also very favorable for bacterial growth.
21 And if there's bacterial growth or fungal
22 growth, it could actually cause death to the

1 chicks, the hatching chicks.

2 So the work we were doing was in that
3 environment, looking at ways to reduce those
4 contaminants using an active technology.

5 Q. Okay. Thank you.

6 And you said that was a few years
7 later in addition to the reference to the 1999
8 work that's on your resume.

9 Approximately how many years later
10 was that?

11 A. Well, I have worked there. We've
12 done more recently in Canada in the last --

13 Q. Okay.

14 A. -- three years.

15 Q. If I could interrupt, though, for a
16 second, that's a -- we'll get to that. I think
17 there's a reference to some Canadian work in the
18 bottom part of this paragraph here.

19 But was it the Canadian work that you
20 were just referring to just now in terms of the
21 later atmospheric cold plasma work?

22 A. No. The atmospheric cold plasma work

1 was around 2010, 2008 to 2010 in North Carolina.

2 Q. Okay. Okay.

3 A. So, yes, that was -- that was work
4 that was completed there. That was around the
5 time that I was transitioning to Purdue
6 University as a professor. We were completing
7 that work there at North Carolina State.

8 Q. All right. Thank you.

9 Now, you mentioned a moment ago that
10 you also did some work in Canada.

11 In your bio here, in the second part
12 of this paragraph on page nine of your CV,
13 Exhibit 2007 says: "More recently, Dr. Keener
14 has been working with poultry egg hatcheries in
15 Canada to evaluate novel technologies to reduce
16 pathogen contamination in egg incubators and on
17 eggs and chicks during hatching, sexing, and
18 transport."

19 Do you see that?

20 A. Yes, I do.

21 Q. Can you just explain a little bit
22 more about what that contamination related work

1 was in Canada?

2 A. Yeah. So this is the last three
3 years myself, and there's another colleague.
4 His name's Keith Warner, along with another
5 colleague that works Agri-Food Canada, Dr.
6 Tatiana Koutchma.

7 The three of us received funding to
8 look at technologies to improve the safety in
9 and -- in egg processing and egg -- the egg
10 industry in Canada as a whole. And so we were
11 evaluating the application of technologies.

12 Specifically, the technology that I
13 was bringing to the table was the cold plasma.
14 Dr. Warner was bringing together a vapor
15 hydrogen peroxide, and Dr. Koutchma was bringing
16 a technology that was a UV-based technology.

17 So the three of us were collaborating
18 and comparing those for these different types of
19 both eggs, and then -- and then chick
20 conditions.

21 Q. All right. Thank you.

22 Now, on the next sentence after the

1 one I just read, you indicated or you said:
2 "Dr. Keener has observed hatching egg processes
3 in small, medium, and large hatcheries."

4 Do you see that?

5 A. Yes, I do.

6 Q. And then you go on -- there's some
7 further comments afterwards.

8 When you refer to small, medium, and
9 large hatcheries, what did you mean by these
10 different sizes?

11 A. Well, this was a representation to
12 give a -- to give a prospective of the types of
13 companies or the types of industry, you know, I
14 would say manufacturers or processors that I've
15 worked with.

16 So small -- so small processors, you
17 know, some of those would be the -- you know,
18 they would say on farm or, you know, small farm
19 flocks. So someone might have anywhere from 25
20 to 500 chickens that they're -- that they're
21 raising either for eggs or for breeding broilers
22 where they're actually hatching the eggs

1 themselves. So there's very simple hatchery
2 systems that are available they can purchase.

3 Medium would be somewhere between,
4 you know, this idea of a thousand up to maybe
5 20,000.

6 Q. Okay.

7 A. And that would be -- that would be,
8 you know, a company that likely would specialize
9 in hatching chicks, maybe specific breeds, maybe
10 specific, you know, applications like organic,
11 for instance. Maybe they're hatching organic,
12 you know, Red Rock chickens or some type of a
13 specialty.

14 When I refer to the large, this is
15 the integrated producers. This would be the
16 Purdue Farms, the Tyson Foods, the Foster Farms,
17 the Rose Acre Farms. All of these have
18 various -- you know, either they go to broilers
19 which are meat, or they go to layers where they
20 have breeding flocks, and so that's kind of the
21 difference in scale.

22 And what I was just making note of

1 here is that, you know, across the U.S. and
2 more -- you know, there's a lot of these varying
3 size farms in North Carolina and the Southeast
4 that I've had a lot of experience with, and then
5 more broadly other parts of the country. In
6 Indiana and the Midwest, there's also a range of
7 these.

8 Q. Okay. Thank you. That's helpful.

9 Now, you mentioned again that you
10 were evaluating the reduction of potential
11 contamination in egg incubators and on eggs and
12 chicks during hatching, sexing, and transport.

13 What's your understanding of sexing
14 that you're referring to here?

15 A. Well, these types of sexing
16 operations were manual. So there would be --
17 and, again, it's based on the size. So if we
18 refer to the large hatcheries, as I've noted
19 here, there's automatic conveyor systems.
20 These, basically, racks of hatched eggs get
21 dumped. They get conveyed into a room that has
22 about 20 -- you know, I would say 20 or so

1 people in there, and all day the people are
2 picking up a chick. They basically, you know,
3 press on its backside, and they identify whether
4 it's male or female, and then they drop it down
5 a chute depending on what they identify.

6 So that's what I was referring to
7 here when I talked about determining the sex.
8 That was all manual operations or --

9 Q. Were --

10 A. -- you know, operations.

11 Q. Okay. And was that only taking place
12 in the large hatcheries or also in the small or
13 medium ones?

14 A. In the small, medium ones also.

15 In the small hatcheries, there was no
16 automated equipment. So when the -- when the
17 eggs came out, they would manually just remove
18 them from the -- from the hatching trays, and
19 they would look at them, and then they would
20 drop them into buckets, for instance, depending
21 on whether they're male or female, healthy or
22 unhealthy.

1 Q. And how about the medium hatcheries?
2 Was there any automated equipment
3 there?

4 A. The ones that I looked at I -- they
5 had -- I would say it was semiautomated, meaning
6 that, you know, they would have, like, a chick
7 dump, but they would just get dumped, and then
8 come onto a table. And the table may not be
9 rotating. It may just be a fixed table that
10 they would get dumped and conveyed onto.

11 So in the bigger ones, it's more of a
12 rotating type table system where there's a bit
13 of a conical shape. And so the chicks, when
14 they come in, they're going to get kind of
15 relayed to the -- to the edges where it's easier
16 for the workers because of the size and the
17 number.

18 That's what I recall from the medium.
19 There wasn't -- there wasn't the level of
20 sophistication in the medium, but in some cases,
21 it was more than what would be done in the small
22 which had no automation.

1 Q. Thank you.

2 And, again, just for clarification,
3 you've referred maybe once or twice to chick
4 dumping or dumping chicks, for example, just
5 now?

6 A. Yes.

7 Q. Is that correct?

8 What did -- what did -- can you
9 elaborate on that?

10 What is -- what are you referring to
11 when you're referring to chick dumping?

12 A. So when the chickens -- when -- I'm
13 sorry.

14 When the eggs go into the hatchery,
15 they're put into, I'll call it, a hatching
16 basket or a hatching tray.

17 Q. Uh-huh.

18 A. And those hatching trays, once the
19 chicks are hatched, there's -- you know, there's
20 a certain schedule for that -- they will be
21 removed from these cabinets, and they'll either
22 be manually or automated put onto and emptied

1 out.

2 And so when I say dumped, these
3 hatching trays -- and most of them now are kind
4 of in a cap- -- a collapsible polypropylene tray
5 where one side can flip down, and they're maybe
6 about, you know, four inches high. They have
7 slots in them to allow air movement and things,
8 but when those are dumped, I refer to dumping,
9 they're generally lifted up and the -- the
10 chicks naturally then will, you know, fall out
11 onto the convey. And the idea is that all of
12 the remnants of shell and if there's any, you
13 know, unhatched eggs that are there, embryo,
14 things like that, those remain as part of that.

15 So when I say the dumping, that's
16 kind of what I'm -- that is what I'm referring
17 to there. And so in the small hatcheries,
18 that's done manually.

19 Q. Okay. Thank you.

20 And in the medium and large, is that
21 done automatically rather than manually?

22 A. In the large ones, it's a lot of

1 automation there. There's still people that are
2 supervising, but it's mostly automated.

3 Q. Thank you.

4 Okay. Dr. Keener, have you in your
5 experience ever designed a system for the
6 automated transport of chicks in a hatchery?

7 A. I've designed a number of automated
8 transport systems, not specifically for a chick.

9 Q. Okay. What types of automated
10 transport systems have you designed?

11 A. I've designed transport systems for
12 eggs going through various types of cooling
13 processes, gas treatment processes. I've
14 designed tunnel systems for gas treatment on
15 fruits and vegetables and meat products. I've
16 designed freezing systems for continuous
17 processing of foods. Those are some that come
18 to mind.

19 Q. Okay. Thank you.

20 Let me see.

21 Have you written any publications on
22 the automated transport of poultry chicks?

1 A. I've not written any -- I've not made
2 any publications or any public documents
3 regarding the transportation of poultry chicks.

4 Q. Have you ever personally performed
5 the chick gender identification?

6 A. I've observed many times. I have not
7 performed.

8 Q. Okay. Have you supervised that
9 process, or are you just observing it taking
10 place?

11 A. No. I was observing and getting --
12 getting the specifications of what was happening
13 from basically the managers within those
14 facilities that were overseeing those activities
15 of those workers.

16 Q. Okay. And what was the purpose of
17 your observing this gender identification in
18 these factories?

19 A. It was related to just understanding
20 those processes and the potential of whether or
21 not those processes would be impacted by some of
22 this research that we were performing on the

1 hatching eggs and being able to, you know,
2 reduce contamination, for instance, on these
3 hatching trays and some of the other research
4 that we were doing. So it was more of just
5 giving a technical perspective of all the
6 different steps there that occur.

7 Q. Okay. Thank you.

8 Dr. Keener, have you had experience
9 with image processing of live poultry?

10 A. I've had significant image process
11 experience, not with live poultry, with -- with
12 eggs, with processed poultry, not with live
13 poultry.

14 Q. Have you yourself ever handled live
15 chicks?

16 A. I have. I've -- I've raised chicks
17 before --

18 Q. Okay.

19 A. -- or chickens, I guess.

20 Q. All right. Thank you.

21 Now, Dr. Keener, just in general, I
22 know you've had depositions taken before. A

1 reminder, we can generally take a break
2 approximately on the hour. If you at some point
3 need to take a break, just let me know. That's
4 presumably familiar for you, but I just wanted
5 to remind you at that point if needed.

6 MR. OLLIS: At this point, can we
7 pull up Exhibit -- I think it's 1001, which is
8 the '124 patent.

9 (Exhibit 1001 was marked for
10 identification.)

11 THE EXHIBIT TECHNICIAN: Stand by.

12 MR. ROBSON: I'm handing Dr. Keener
13 Exhibit 1001.

14 MR. OLLIS: Thank you.

15 BY MR. OLLIS:

16 Q. Dr. Keener, do you have U.S. Patent
17 Number 10,806,124 in front of you on paper copy?

18 A. Yes, I do.

19 Q. And do you see the upper half of that
20 '124 patent on screen as well?

21 A. Yes, I do.

22 Q. Okay. And is it your

1 understanding -- do you recognize the '124
2 patent?

3 A. Yes. I've reviewed this patent as
4 part of my declaration.

5 Q. Okay. Thank you.

6 MR. OLLIS: Could we go to -- oh,
7 gosh. It's probably the second to the last
8 page. I didn't make a note. It's going to be
9 claim 1 here. And scroll up a little bit.

10 Yeah. There's the claim 1, and we
11 can just elaborate. The bottom -- sorry, bottom
12 right column.

13 Do you see where there's a "1" about
14 line -- just above the line -- the 55 number?

15 BY MR. OLLIS:

16 Q. Do you see that, Dr. Keener?

17 A. Yes, I do.

18 Q. Okay. And are you familiar with
19 claim 1 of the '124 patent?

20 A. Yes, I am.

21 Q. Okay. And I'm just going to read the
22 first two or three lines. It says: "1. A

1 system for determining the sex of a chick
2 comprising: a moving platform to support a
3 unrestrained chick of a particular breed."

4 Do you see that?

5 A. Yes, I do.

6 Q. Are you familiar with that portion of
7 claim 1?

8 A. Yes, I am.

9 Q. Okay. Thank you.

10 If you could also turn now to
11 paragraph 117 of your declaration?

12 So, again, this is, I think, Exhibit
13 2002.

14 MR. OLLIS: Maybe we could pull that
15 up on the screen as well?

16 THE EXHIBIT TECHNICIAN: That's 2002,
17 correct?

18 MR. OLLIS: Yes.

19 THE EXHIBIT TECHNICIAN: Stand by.

20 MR. OLLIS: Yeah. And if he could
21 go -- sorry -- to paragraph 117?

22 I think it's on page 70 or PDF page

1 70.

2 Okay. Thank you.

3 BY MR. OLLIS:

4 Q. Dr. Keener, do you see paragraph 117
5 of your declaration there?

6 A. Yes, I do.

7 Q. And in the middle of that paragraph,
8 you state that: "The '124 patent specification
9 very clearly depicts and describes a system
10 where the moving platform (a conveyor belt) is
11 in motion supporting and transporting the chick
12 through the system."

13 Do you see that sentence there?

14 A. Yes, I do.

15 Q. Now, when you refer to the '124
16 patent specification, we just looked a moment
17 ago at '124 patent, claim 1, the first part of
18 that.

19 Do you recall that?

20 A. Yes.

21 Q. Is it your understanding that the
22 '124 patent, claim 1 requires that the moving

1 platform is in motion supporting and
2 transporting the chick through the system?

3 A. That is correct. Yes.

4 Q. Okay.

5 A. And I guess, just to expand on that
6 further, to that point, on the next page, I
7 actually have the figures that I've reproduced
8 that show one representation of that process.

9 Q. Right. And one of those now are on
10 the bottom of your paragraph -- I guess it's
11 page -- numbered page 68 of your declaration?

12 That's what you're referring to?

13 A. Yes.

14 Q. And one of the figures that's
15 reproduced on that page is Figure 3 from the
16 '124 patent; is that correct?

17 A. That's correct. Yes.

18 That shows the chick on the -- on the
19 conveyor being supported by the moving -- the
20 moving platform there or the conveyor belt is
21 what I have in parentheses, yes.

22 Q. Right. And am I correct in

1 understanding that in your view, Figure 3
2 depicts a moving platform to support an
3 unrestrained chick as recited in claim 1 of the
4 patent?

5 A. That's correct. Yes.

6 Q. Okay.

7 A. It's one -- one embodiment I would
8 say.

9 Q. Understood.

10 And why do you say that the chick is
11 supported in the embodiment shown in Figure 3 of
12 the '124 patent?

13 A. Well, I -- when I talk about support,
14 you know, to me, a person of ordinary skill in
15 the art would understand that that support is
16 something which basically, you know, is
17 resisting the gravitational force as an example.

18 So when you look at the '124 and it
19 talks about this conveyance, there's -- in these
20 different conveyor systems, the support there is
21 that, you know, resistance to gravity, if you
22 will. That's what it means by support.

1 Q. Resistance to gravity. Okay.
2 Now, looking at Figure 3 as an
3 example, does it matter how steep the conveyor
4 is in terms of knowing whether the chick is
5 supported, as that word is used in the claim of
6 the '124 patent?

7 MR. ROBSON: Objection, scope.

8 THE WITNESS: Yeah. I think
9 within -- within my -- with my review and
10 evaluation, I didn't -- I didn't look or
11 consider the -- you know, the angle. I just
12 looked at whether or not it would be -- it would
13 be supported as -- as described in claim 1.

14 And so I view that as a -- you know,
15 the support there, it wouldn't -- it wouldn't --
16 like, if it's being conveyed on that, it's being
17 supported as an unrestrained chick. It
18 wouldn't -- yeah. I hadn't -- I hadn't -- I
19 wasn't asked to opine upon what angle that would
20 be.

21 BY MR. OLLIS:

22 Q. Okay. So if the angle is so steep

1 that the board was falling -- would fall
2 forward, would you consider that to be supported
3 on the moving platform?

4 MR. ROBSON: Same objection.

5 THE WITNESS: I -- I think it
6 would -- I would need specifics.

7 So when you say -- you know, when you
8 say moving forward or falling forward, what do
9 you mean there?

10 BY MR. OLLIS:

11 Q. It's steep enough that the chick is
12 unable to stand on its own, so it would tumble
13 forward because of the angle of the platform
14 (counsel indicating).

15 A. I -- yeah. I don't -- I can't give
16 you a yes or no to that because there's a lot of
17 considerations and factors of, you know, the --
18 how the chick is being deposited on the
19 platform, the speed of the platform. There's a
20 lot of different factors that would -- that
21 would need to be -- I would have to consider as
22 part of that.

1 Support to me means that it would --
2 it would continue to, you know, provide a, if
3 you will, foundation for that chick as it's
4 being transported.

5 So -- so I don't know -- yeah. I
6 can't give you -- I can't give a clear answer on
7 what angle. I haven't asked -- I haven't been
8 asked to opine upon that within my declaration.

9 I was looking at my declaration at
10 the prior art as was assembled by the
11 petitioners, and there's nothing in the prior
12 art that has evaluated or discussed any type of
13 angle on a platform, a moving platform.

14 Q. Okay. And then we'll come to another
15 example later I think in the prior art, but
16 since we have Figure 3 in front of us at the
17 moment, if the bird jumps up off the platform,
18 is it supported by the moving platform at that
19 point?

20 A. It would still be supported by the
21 platform. I don't see that as being a question.
22 You know, there -- the claims themselves don't

1 stipulate the position of the bird's feet. It
2 just says supported. And so a person of
3 ordinary skill would understand that these
4 chicks are -- you know, they're not going to
5 stand stationary.

6 If you think of a person running, for
7 instance, at some point in running, one foot is
8 off the ground, but the ground would still
9 support.

10 That's how a person of ordinary skill
11 in the art would observe or understand this
12 moving platform in support of the unrestrained
13 chick.

14 Q. Thank you.

15 If you want, we can go back to claim
16 1 again, the language of that, just so that we
17 have it, but it's the phrase again -- of course,
18 we'll be talking a lot about and you were
19 talking a lot about in your declaration a moving
20 platform to support an unrestrained chick.

21 Do you recall that language from
22 claim 1 of the '124 patent?

1 A. I do, yes.

2 Q. Thank you.

3 Does that phrase of the '124 patent,
4 claim 1 require the chick to be supported by the
5 moving platform the entire time that the
6 platform is moving?

7 MR. ROBSON: Objection, form.

8 THE WITNESS: So the analysis that
9 you're asking, I haven't been asked to perform.

10 The -- the question of whether the
11 chick is -- you know, if the chick is on the
12 moving platform, and it's restrained and the
13 platform is moving, that's -- that's what's in
14 claim 1. That's what's encompassed.

15 You know, a question about the
16 positioning of the chick's feet, you know,
17 things like angle, those aren't in the prior
18 art. I haven't examined those particular
19 aspects. I haven't done an analysis of those,
20 so I'm not prepared at this point to give you an
21 opinion on that because I haven't studied that
22 thoroughly.

1 Q. Okay. Again, coming back to -- maybe
2 we could -- it's probably best to --

3 MR. OLLIS: Let's pull up the '124
4 patent, claim 1, again, if we could.

5 So, again, that's the second to the
6 last page, the lower right of Exhibit 1001.

7 There we go.

8 BY MR. OLLIS:

9 Q. And, Dr. Keener, do you see claim 1
10 again there from the '124 patent?

11 A. I do, yes.

12 Q. And, again, I'm just going to read
13 this a little bit further. So claim 1 recites
14 -- correct me if I've read it incorrectly:
15 "1. A system for determining the sex of a chick
16 comprising: a moving platform to support an
17 unrestrained chick of a particular breed; at
18 least one stimuli to cause the chick to open its
19 wings; an image capture device to capture at
20 least one image of the chick?"

21 Do you see that?

22 A. I do, and then the rest of the claim

1 talks about a computer processor and a database
2 of images.

3 Q. Correct. Correct.

4 So with these first clauses, we have,
5 again, the phrase "a moving platform to support
6 an unrestrained chick of a particular breed."

7 And a third clause is "an image
8 capture device to capture at least one image of
9 the chick."

10 Do you see that?

11 A. Yes, I do.

12 Q. Okay. Is it your understanding that
13 the '124 patent claim does require the chick to
14 be supported on a moving platform through the
15 sexing and evaluation process?

16 MR. ROBSON: Objection to form.

17 THE WITNESS: So the platform is
18 going to support the chick throughout these
19 various, um, you know, analyses. So one of
20 those -- one of those that's listed here -- if
21 we -- if we move on down, we can find one that
22 talks about the sexing of the male and female

1 wing --

2 BY MR. OLLIS:

3 Q. Dr. Keener, sorry.

4 You said "move on down."

5 What -- move on down and what?

6 A. Oh, I was just referring to the male
7 and female wing patterns for the particular
8 breed. That would be where the sexing -- the
9 images that are in the database, that's where
10 this sexing process would occur to determine the
11 sex. So I was just pointing that out; that all
12 of that occurs as part of this claim 1.

13 So it would be on the moving
14 platform, unrestrained chick, stimuli, camera,
15 computer analysis of the database of images.

16 Q. All right. Just one moment.

17 MR. OLLIS: I'll tell you what. We
18 are right at 11:00 o'clock.

19 If we can take maybe a short break,
20 five or ten minutes, does that work?

21 THE WITNESS: That's fine.

22 MR. ROBSON: Sure.

1 MR. OLLIS: Okay. So why don't we
2 reconvene at 11:10, unless anyone needs more
3 time.

4 THE WITNESS: That's fine. Thank
5 you.

6 MR. OLLIS: Thank you.

7 (A short recess was taken.)

8 MR. OLLIS: Thank you.

9 BY MR. OLLIS:

10 Q. Dr. Keener, do you still have your
11 declaration, Exhibit 2002, in front of you?

12 A. I have it here to the side, yes.

13 Q. Okay. If we could go to paragraph
14 119, and we could also pull that up on the
15 screen. I think that's PDF page 72.

16 THE EXHIBIT TECHNICIAN: On the
17 document -- which exhibit, Counsel?

18 MR. OLLIS: Oh, I'm sorry. It's
19 2002.

20 THE EXHIBIT TECHNICIAN: Okay.

21 And page -- what page?

22 MR. OLLIS: Numbered page 69, PDF

1 page 72.

2 THE EXHIBIT TECHNICIAN: All right.

3 Okay. It's on the screen.

4 THE COURT REPORTER: No, it's not.
5 Enrique, it's not the -- it's not on the screen.

6 THE WITNESS: I think the document
7 takes a bit. It's a long document.

8 THE EXHIBIT TECHNICIAN: It's on.

9 MR. OLLIS: It is a long document.

10 Can we -- thank you.

11 Can you scroll up a little bit so we
12 can see more of the text of paragraph 119 there?

13 Okay. Thank you.

14 BY MR. OLLIS:

15 Q. Now, Dr. Keener, this paragraph 119
16 is under the heading C, "unrestrained chick."

17 Do you see that?

18 A. Yes, I do.

19 Q. And the second sentence here of this
20 paragraph reads: "In the claimed system an
21 'unrestrained' chick is supported by the moving
22 platform, and the chick can move forward,

1 backward, left, right, it can rotate, and it can
2 jump and flap its wings."

3 Do you see that?

4 A. Yes, I do.

5 Q. Is that still your understanding of
6 the unrestrained chick in the '124 patent, claim
7 1?

8 A. Yes, it is. I thought that's what I
9 had restated. Essentially, "unrestrained" means
10 the chick has freedom of movement.

11 Q. Okay. And if any of the, for
12 example, forward or backwards or rotating
13 movement options for the chick are not
14 available, is the chick then restrained?

15 A. In regards to the -- well, it
16 would -- it would -- I guess, I need more
17 clarification on what you mean.

18 If --

19 Q. Well, I'm just trying to follow up on
20 this sentence.

21 I'm sorry. Why don't you continue?

22 I didn't mean to speak over each

1 other.

2 A. What I was -- what I -- in regards to
3 the unrestrained, so we talked about forward,
4 backward, left, right. You know, it can rotate.
5 It can jump. It can flap its wings. It has the
6 ability to move in all of these dimensions while
7 on the platform.

8 The platform itself has some, you
9 know, obviously, barriers just because there's a
10 certain width to the -- to the moving platform,
11 but those barriers are not inhibiting this
12 freedom of movement for the chick itself.

13 Q. Okay. But to come back to my -- and
14 we'll come back to that in a moment.

15 But, again, to come back to my
16 question, you indicated in this sentence that an
17 unrestrained chick can move forward, backwards,
18 left, right. It can rotate, and it can jump and
19 flap its wings.

20 And that's the sentence in your
21 declaration at paragraph 119?

22 A. That's correct. Yes.

1 Q. So I guess what I'm trying to
2 understand is if one of those degrees of
3 freedom, a rotation, is taken away, is the chick
4 then restrained?

5 MR. ROBSON: Objection, scope.

6 THE WITNESS: What I've -- what I've
7 stated in reference to -- you know, I
8 distinguished this in another section where I
9 talk about Yavnai. And specifically Yavnai has
10 these two bars, and so those bars are -- you
11 know, distinguishing that from unrestrained,
12 those bars in my opinion and a person of
13 ordinary skill in the art would look at those
14 bars as they're represented in that figure and
15 how it's presented for that system to work in
16 Yavnai, the chick has to be restrained, and so
17 it's limiting the movement.

18 Here, I'm distinguishing that
19 movement from Yavnai. Specifically, this
20 unrestrained versus in Yavnai, in my opinion,
21 and a person of ordinary skill would look at
22 that and say it's restrained.

1 So wouldn't you say, you know,
2 restrained in terms of one or more of these
3 motions? It may be.

4 My particular presentation here was
5 to distinguish between what's in Yavnai and the
6 prior art. I didn't look at all combinations of
7 what would be considered restrained within my
8 report. I just focused on the prior art in my
9 examination.

10 BY MR. OLLIS:

11 Q. Okay. So you were focusing --
12 understood.

13 I'll ask a follow-up question. I may
14 know the answer, but at the -- you mentioned,
15 again, at the end of this sentence that the
16 chick can move forward, back or left or right
17 and re-rotated -- sorry. It can rotate, and it
18 can jump and flap its wings.

19 If the chick is unable to jump, is it
20 restrained in your understanding?

21 MR. ROBSON: Objection, form.

22 THE WITNESS: Well, I think -- I

1 think "jump" here is in reference to just the
2 ability or mobility of the chick itself. So if
3 it's limited in its -- it its ability to move,
4 jump would be one possibility. You know, you
5 can imagine all the different ways that someone
6 can, you know, walk, run, jump.

7 So what I'm presenting here is a
8 representation to say that, you know, it can.
9 It has this freedom of movement. So that's what
10 I'm presenting here. Jump is just one -- is one
11 example. If it's restricted in those movements,
12 then it would be -- it would not -- it would not
13 be unrestrained.

14 BY MR. OLLIS:

15 Q. Okay.

16 MR. OLLIS: Can we flip back to the
17 previous page?

18 There a -- I think a copy of Figure 3
19 from the '124 patent.

20 There we go. Thank you.

21 BY MR. OLLIS:

22 Q. And I think you mentioned something

1 about the moving platform having some barriers
2 inhibiting freedom. I don't know if I phrased
3 that correctly.

4 Do you recall that a moment ago?

5 MR. ROBSON: Objection. It misstates
6 the witness's prior testimony.

7 BY MR. OLLIS:

8 Q. Yeah. Please. You referred to
9 barriers on the platform I believe, Dr. Keener.

10 Am I recalling correctly?

11 A. Well, I -- yeah. Sidewalls is what
12 I -- you know, more technically when I design
13 systems, those are considered sidewalls, and so
14 that's what -- that's what's represented here
15 by -- you know, I can go into the -- let me --
16 let me just look at the patent briefly and see
17 what the reference number 28 is because that's
18 to get it technically correct because I don't
19 remember. They refer to it as a pair of rails.

20 Q. Correct.

21 And do those rails restrain the chick
22 on the moving platform in Figure 3 of the '124

1 patent?

2 A. The embodiment that's there, I do not
3 believe those would restrain the chick because
4 the chick has, you know, again, freedom of
5 movement in all directions.

6 Q. And if the chick is right up against
7 one of the rails, say, its left shoulder, is the
8 chick then restrained by the rail on the moving
9 platform in Figure 3 of the '124 patent?

10 A. Well, the chick -- the chick would
11 have the ability to move. That's what I'm
12 saying in terms of restrained versus
13 unrestrained is the ability to move. So it
14 could be up against the rail, but it could move,
15 freely move.

16 And if I refer to Yavnai, because
17 that's one of the prior art that I've examined,
18 you know, Yavnai has poles in the embodiment
19 that was -- that was described by the
20 petitioner. In that embodiment, those poles
21 restrict the chick from moving. It's clear from
22 that embodiment and from the description that

1 the chick has to be fixed in a position in order
2 for the image capture to work successfully.

3 So when you're asking about this
4 particular, you know, figure, this figure shows
5 the freedom of movement. You know, the chick
6 could be deposited at any location, and it would
7 have the freedom to move.

8 Q. All right. A moment ago you said:
9 It's clear from the embodiment and from the
10 description the chick has to be fixed in a
11 position in order for the image capture to work
12 successfully. (As read)

13 Do you recall that statement just a
14 moment ago?

15 A. In reference to Yavnai, that's
16 correct.

17 Q. In reference to Yavnai?

18 A. Yes.

19 Q. Okay. That's what I just wanted to
20 confirm.

21 That was with respect to Yavnai?

22 A. That's correct.

1 Q. And what did you mean by fixed in a
2 particular position there?

3 A. So within Yavnai and, you know, if --
4 so we can -- if we want to go to that, I can
5 point out the specifics.

6 Q. Sure. Yeah. We can call that up.
7 Let me just -- Yavnai is Exhibit 1005.

8 MR. OLLIS: Maybe we can pull that
9 up?

10 THE EXHIBIT TECHNICIAN: Stand by,
11 please.

12 MR. ROBSON: Handing the witness a
13 hard copy of Exhibit 1005.

14 MR. OLLIS: Thank you. I'll wait
15 until it gets pulled up on the screen as well.

16 And when it is, if we could go to
17 Figure 5?

18 (Exhibit 1005 was marked for
19 identification.)

20 BY MR. OLLIS:

21 Q. Dr. Keener, I'm assuming Figure 5 is
22 useful for this discussion that we're talking

1 about here?

2 A. Yeah. There's 5A and 5B, which I've
3 referenced in my report also.

4 Q. Right.

5 MR. OLLIS: I don't know if we can
6 rotate the view 90 degrees but -- on the screen.
7 BY MR. OLLIS:

8 Q. Okay. And you have Figure 5A and 5B
9 of Yavnai in front of you now?

10 A. I do, yes.

11 Q. So, anyway, if we can continue where
12 we were, you said it would be helpful to have
13 Yavnai in front of you there.

14 A. So what I was referring to was if
15 one -- if one looks at the poles specifically,
16 these poles are limiting the ability of the
17 chick to move as shown in 5B. They're
18 positioned such that when the -- as the chick
19 progresses along this, you know, conveyor or
20 transportation process, the poles are elevated.
21 So it's restricting the chick's movement because
22 if the chick could rotate at any point, when it

1 gets to the end, the wings will not be forcibly
2 spread which is necessary to capture the image
3 for the -- the sexing or the image comparison as
4 presented in Yavnai.

5 So, you know, a person of ordinary
6 skill would understand from this picture that
7 the chick has to be restrained in order for the
8 image to be relevant to the characterization of
9 the feathers. If the chick would move in any
10 position other than facing forward, the capture
11 system wouldn't work as proposed in the patent.

12 Q. Okay. There's -- there are several
13 points there.

14 If I could go back, though, earlier,
15 before we pulled up Yavnai, you had mentioned as
16 I understood, though, that the chick had to be
17 fixed in a particular position in Yavnai.

18 Was that correct?

19 A. It's -- positionally, it's centered
20 between the poles. Yes. It can't -- it can't
21 run outside of the two poles. And if it rotates
22 within those two poles, it will -- it will not

1 reach the endpoint under the conditions that are
2 necessary in order to -- you know, in order to
3 implement the -- as described in the patent.
4 The image won't be -- won't be a proper image at
5 that point.

6 Q. Right. That's -- we'll get to the
7 rotation point in a minute, but, yeah.

8 I just want to confirm your
9 understanding that the chick is fixed in Yavnai?

10 A. The chick is restricted in certain
11 motion in Yavnai. The lateral movement left and
12 right in Yavnai is restricted by the poles.
13 Even though the poles at the beginning are quite
14 low, as I've noted in my report, the poles have
15 to restrict the chick or else the chick
16 literally would fall off the conveyor. There's
17 no other indication in Yavnai of any other types
18 of, you know, restrictions there on the -- on
19 the sides, no rails or anything like that other
20 than -- other than these two poles.

21 Q. Okay. Now, a moment ago you
22 mentioned that it was your understanding that

1 Yavnai requires the chick to face forward for
2 the system to work.

3 Was that correct?

4 A. A person of ordinary skill in the art
5 would understand that when you're taking these
6 images, the images that are going to be taken,
7 the chick has to be in a very specific position.
8 That's what Yavnai is instructing.

9 And so that position, based on these
10 images, the chick is facing forward. If the
11 chick was facing, you know, 90 degrees left, 90
12 degrees right, 180 degrees backwards, the system
13 wouldn't work as intended.

14 Q. And is there a part of Yavnai that
15 you're relying on for that understanding?

16 A. Of the system not --

17 Q. Requiring the chick face forward?

18 A. It's a specification for the image
19 capture. So, specifically -- let me see if I
20 can recall in Yavnai -- you know, he's forcing
21 the chicken -- the chick's wings open. That's
22 in there.

1 Let me see if I can -- I have Yavnai
2 here. Let me see if I can find that
3 statement --

4 Q. Okay.

5 A. -- that he has in the background.

6 So give me a second to look at that,
7 or if we could just do a search on the screen,
8 that might be faster.

9 Q. What -- let's see. I don't know if
10 it's searchable on that version.

11 Are you looking for the paragraph
12 that discusses Figure 5, or are you looking for
13 a different paragraph?

14 A. Well, the one where it requires the
15 wings -- so I think maybe it's Figure 6.

16 Let me see here. I'm looking to see.

17 I'm looking for the section where --
18 where it requires that the -- that the -- the
19 chick has to be engaged at the poles when the
20 image is taken. So let me see that.

21 Q. Paragraph 42 talks about Figure 5.

22 A. Yeah. So in -- so this talks about

1 the pole supporting the spread wings. A light
2 shines on the wing tips of the chick. So that's
3 the part that I was referring to there.

4 Is that -- for that -- for that to
5 occur as stated, the chick has to be facing in a
6 forward manner. And in order to do that, it has
7 to have restrictions on the -- the chick won't
8 just stay there. So these poles -- there's --
9 there's a -- you know, as it talks about here,
10 there's vibration possibly in the mechanical
11 system so the chick is jumping up and down as
12 shown in the Figure 10. And then as it jumps up
13 and down or vibrates up and down, it spreads its
14 wings, and then the poles itself restrict the
15 ability of the chick to retract its wings. And
16 the image is taken at that point.

17 That's how a person of ordinary skill
18 in the art would interpret and understand that
19 paragraph.

20 Q. And your understanding from that
21 paragraph is that it also -- a person of
22 ordinary skill in the art would understand that

1 the chick has to face forward as well; is that
2 correct?

3 A. That's correct. If the chick wasn't
4 facing forward, the uncertainty would be how
5 that image would be taken and compared to this
6 other -- this other comparative image.

7 Q. Okay. Just give me a moment. We've
8 jumped around a little bit here. I was kind of
9 going with the flow of the conversation.

10 We'll come back to the prior art in a
11 minute. I just wanted to go back to the claim
12 one or two more times here.

13 MR. OLLIS: So if we could go back,
14 again, to Exhibit 1001, claim 1?

15 BY MR. OLLIS:

16 Q. Do you see that, or do you have that
17 either in paper in front of you or on screen,
18 Dr. Keener?

19 A. I can see the screen, yes.

20 Q. Okay. Thank you.

21 And the last clause you allude- --
22 referenced it earlier in one of your comments.

1 It talks about "a computer processor having a
2 database of images of male and female wing
3 patterns," et cetera?

4 Do you see that?

5 A. I do, yes.

6 Q. And in your declaration, at some
7 points, you've offered some comments about
8 whether the database of images are present in
9 some of the references; is that correct?

10 A. Yes. I -- I've commented in there
11 that specifically in regards to the reference on
12 the prior art of Pierre that Pierre does not --
13 does not present any information about a
14 database. That's correct.

15 Q. Okay. And do you have an
16 understanding of what a database is in claim 1?

17 MR. ROBSON: Objection, form.

18 THE WITNESS: Well, as it states
19 here, the database is images of male and female
20 wing patterns for a particular breed, so that's
21 how I interpret the database.

22 BY MR. OLLIS:

1 Q. Okay. But is there any -- and is
2 anything -- I'm trying to understand. I
3 understand that there must be images of male and
4 female wing patterns that's recited in the
5 claim.

6 Is anything more than images of male
7 and female wing patterns required to have a
8 database and according to claim 1?

9 A. Well, this is an example of a
10 database. That's how I would -- that's how I
11 would put that. It's an example.

12 Q. But what is -- what is the database
13 generally, to your understanding?

14 A. Well, I mean, a database is a
15 collection of information that can be, you know,
16 readily -- it's organized, a collection of
17 information that's organized and accessed,
18 readily accessed.

19 Q. Okay. Now, you have claim 1 in front
20 of you again.

21 Do the claims in claim 1 in
22 particular of the '124 patent require a

1 commercially viable system?

2 MR. ROBSON: Objection to form.

3 THE WITNESS: I don't -- when you say
4 "commercially viable," what -- can you -- can
5 you define that for me?

6 BY MR. OLLIS:

7 Q. Sure. I mean, one that a -- is
8 the -- does the '124 patent claims or do -- let
9 me start again.

10 Do the '124 patent claims require a
11 system that could be economically viable?

12 MR. ROBSON: Objection to form.

13 THE WITNESS: Well, I mean, I
14 haven't -- I haven't done an assessment of that
15 from an economic standpoint.

16 What I can say is the invention is
17 based upon what's in the claims, and so, you
18 know, viability has many other factors, you
19 know, in terms of the -- you know, the industry,
20 the -- you know, there's needs for these types
21 of systems, but I don't -- I haven't done that
22 analysis.

1 So what I can say is is I can just
2 say what's claimed here is the invention.

3 BY MR. OLLIS:

4 Q. In your understanding, could the '124
5 patent, claim 1 cover an operating experimental
6 system?

7 MR. ROBSON: Objection to form.

8 THE WITNESS: Well, inventions
9 themselves, there isn't any restriction of --
10 you know, if those -- if those particular
11 claimed elements are incorporated in the system
12 regardless of its size, then it would be, you
13 know, covered by the claims in this particular
14 invention.

15 BY MR. OLLIS:

16 Q. Okay. Thank you.

17 All right. Maybe now let's -- we can
18 shift to more of the prior art references. I
19 know we've talked about Yavnai, but I'd like to
20 go to Gershman. Well, actually, I take that
21 back.

22 We had Yavnai already up, so why

1 don't we start with that one, I guess, and that
2 was, again, Exhibit 1005.

3 THE EXHIBIT TECHNICIAN: Counsel, do
4 you have a particular -- this exhibit is fine?

5 MR. OLLIS: Oh, no. Sorry.

6 I'd just like to have again 1005
7 available also and -- but also we're going to go
8 to Dr. Keener's declaration in paragraph 51.

9 Sorry. This is -- yeah. This is --
10 that's the -- that's Exhibit 1005.

11 If we can go to Exhibit 2002,
12 paragraph 51?

13 There we go. Thank you. Thank you.

14 BY MR. OLLIS:

15 Q. Do you see that paragraph, Dr.
16 Keener?

17 A. I do, yes. I wrote this.

18 Q. Okay. Good.

19 And at the beginning, in paragraph
20 51, there's a statement about -- in fact, it's
21 underlined in part of claim 1 which says "a
22 moving platform to support an unrestrained

1 chick."

2 Do you see that?

3 A. I do. This is -- this is in quotes
4 in reference to what the petitioner had alleged.
5 That's correct.

6 Q. Right. And an unrestrained chick is
7 underlined -- underlined and bolded, in fact, in
8 the quote, and the sentence continues in
9 reference to with "an image capture device to
10 capture at least one image of the chick."

11 A. That's correct.

12 Q. And let me go down and see where I
13 understand -- actually, look at the rest of the
14 paragraph.

15 MR. OLLIS: Can we scroll down a
16 little bit?

17 BY MR. OLLIS:

18 Q. Okay. So on screen on, I guess it's
19 the top of numbered page 23 of your declaration,
20 five or six lines down, there's a sentence that
21 says: "Based on my understanding, the
22 antecedent basis for 'the chick' imaged is 'an

1 unrestrained chick," referring to claims 1, 6
2 and 9 respectfully.

3 Do you see that?

4 A. Yes. This is in the '124 patent.
5 Yes.

6 Q. Claim 1.

7 I just wanted to confirm that it's
8 your understanding in -- currently, as stated in
9 the declaration, that the chick that's referred
10 to with respect to the capturing of at least one
11 image of the chick is the unrestrained chick; is
12 that correct?

13 A. That's correct. Yes.

14 Q. Now, we can go to paragraph 54, and
15 this touches on a point I think you mentioned
16 earlier. Let me scroll down here.

17 Again, about five or six lines down
18 into this paragraph, you had stated: "Notably,
19 the Yavnai system has no side walls, which are
20 necessary to keep the chick on the moving
21 platform," et cetera.

22 Do you see that?

1 A. Yes, I do.

2 Q. And is that still your opinion of how
3 a person of ordinary skill in the art would
4 understand Yavnai?

5 A. Yes, it is. If there weren't -- if
6 the poles were not considered sidewalls,
7 there's -- the chick would go in any direction
8 that it wanted and likely -- likely off the
9 platform.

10 Q. And so it's your understanding,
11 again, that the poles in Figure 5A and 5B of
12 Yavnai are keeping the chick on the moving
13 platform; is that correct?

14 A. They're -- they're used to restrain
15 the chick, and also, at the same time, keep the
16 chick on the moving platform, yes.

17 Q. Okay.

18 MR. OLLIS: Could we go back -- well,
19 let's go to paragraph 55 for a moment. I forgot
20 which paragraph we have. I guess just a few
21 more down the road. Thank you.

22 BY MR. OLLIS:

1 Q. One -- just a moment. It may be
2 further.

3 So I guess it's the very end. So I
4 guess the next page, top of page 26 of your
5 dec- -- numbered page 26, towards the -- the
6 last sentence says -- your paragraph 55 in your
7 declaration there.

8 A. I see that.

9 Q. Is that the right one? Sorry.

10 Yeah. And you state that -- sorry.

11 MR. OLLIS: If we could scroll down a
12 little bit further. There we go.

13 BY MR. OLLIS:

14 Q. "Accordingly, a POSITA would
15 understand that in Yavnai, at the time the chick
16 is imaged, poles 64 restrain the chick laterally
17 and restrain the chick'S wings, preventing them
18 from closing."

19 Do you see that?

20 A. I do, yes, and I agree with that. I
21 wrote that.

22 Q. And this is with respect, again, to

1 Figure 5 of Yavnai; is that correct?

2 A. This would be 5A, 5B. Yes, Figure 5.

3 Q. Thank you.

4 Do the poles restrain the chick
5 vertically?

6 A. They could. It depends on their --
7 you know, if you imagine a chick with -- with
8 its feet -- I haven't done that analysis, but at
9 a minimum, I've -- as I've noted here, there is
10 a restraint. There's -- there's a lateral
11 restraint to the chick, and it's necessary in
12 order to, you know, implement Yavnai's --
13 Yavnai's patent.

14 So I can't say for sure whether they
15 would restrict the chick from, you know,
16 vertical movement. They could, but it isn't
17 clear. Yavnai, you know, doesn't discuss that.
18 And so for me, I couldn't do more analysis than
19 what just Yavnai has, looking at his figures and
20 looking at his background.

21 Q. Okay.

22 MR. OLLIS: Can we pull up Figure 5A

1 again from Yavnai?

2 So, again, that's -- I keep
3 forgetting the number. It's 1005. And I guess
4 we're going to have to, yeah, rotate it around.

5 THE EXHIBIT TECHNICIAN: Do you know
6 what PDF page it's on?

7 I don't know.

8 MR. OLLIS: It's going to be a little
9 higher up. Probably about three or four pages
10 up from where you are. You're getting close.
11 You're getting warm.

12 THE EXHIBIT TECHNICIAN: Okay.

13 MR. OLLIS: There we go.

14 Can you rotate that page?

15 THE EXHIBIT TECHNICIAN: I did, yeah.
16 There you go.

17 MR. OLLIS: All right.

18 BY MR. OLLIS:

19 Q. Do you see that, Dr. Keener, Figure
20 5A, again, from Yavnai?

21 A. Yeah. And this is a -- and so, you
22 know, he shows the chick on the vibration.

1 So -- and also, you know, when I look at this
2 picture, a person of ordinary skill in the art
3 would recognize that the chick has some movement
4 at some point.

5 But, for instance can the chick's
6 feet go above the poles? I don't know.

7 So when you're asking me, that's --
8 that's the unknown that I can't answer is
9 whether the chick's feet are restricted
10 vertically because the -- you know, the poles
11 that are there and this vibration that's there
12 is visualizing here that the chick is moving off
13 of the platform at several points, but at the
14 end where it's being imaged it has to be
15 restrained in order to capture the image of the
16 wings extended.

17 Q. Okay. And is it your understanding
18 -- and it's -- you said its feet -- the chick's
19 feet at some points are leaving the platform as
20 shown in Figure 5A of Yavnai; is that correct?

21 A. In 5A, there's the -- you know, if we
22 look at the chick, which it would be, you know,

1 in the third position, as I would refer to that,
2 you know, as it's represented in the figure --
3 and the figures of course are just
4 representations, so it may or may not be that
5 case in reality, but it shows that at least the
6 representation that the chick itself could leave
7 the platform.

8 Q. And I could take you to a sentence in
9 Yavnai if it's helpful, but I believe Yavnai
10 refers to the chick jumping up and down on the
11 platform.

12 Is that consistent with your
13 recollection?

14 MR. ROBSON: Dr. Keener, were you
15 finished with your prior answer?

16 I heard you begin to speak.

17 THE WITNESS: I was going to say that
18 Yavnai does talk about the chick moving up and
19 down, but he doesn't say how high or how far
20 that chick can move.

21 BY MR. OLLIS:

22 Q. Okay. Do you agree that in Figure 5A

1 of Yavnai the chick is supported on the moving
2 platform the whole time the chick is represented
3 as being on that platform?

4 A. So I see this chick as supported. I
5 also see the chick as being restrained. That's
6 how I've presented the -- the restraints in
7 Yavnai are -- are where -- where I see this
8 issue because the restraints themselves can lead
9 to, you know, significant injury of these
10 chicks.

11 Q. Okay. Is it your understanding in
12 reading Yavnai that the chicks are in a single
13 file when looking at, for example, Figure 5A and
14 B?

15 A. Yes. That would -- that would be the
16 interpretation that I have because of the poles
17 themselves requiring the chicks to be at the
18 point of the image being taken. The wings of
19 the chick have to be -- you know, I refer to it
20 as restrained. He refers to it as support, and
21 I've stated in my declaration those are not
22 mutually exclusive. I go on to expand on that,

1 but the way that he presents this particular,
2 you know, process or technology is that the
3 chick has to be -- has to have the wings
4 restrained. And in order to do that, it has to
5 be a single file process.

6 Q. Do you know if it was known to
7 present chicks in single file in the hatchery
8 art as of 2015?

9 MR. ROBSON: Objection to scope.

10 THE WITNESS: In what context?

11 BY MR. OLLIS:

12 Q. Any sort of hatchery processing that
13 would happen with day-old chicks?

14 A. Generally, because of the throughput.
15 I mean, the conveyors themselves would be --
16 would be, you know, up to several feet wide. It
17 would be, in my opinion, and I think a person of
18 ordinary skill in the art would look at this and
19 say that, you know, to process, you know, many
20 chicks per second, it just wouldn't be practical
21 to implement this type of a system, along with
22 the other limitations that I've described in my

1 declaration of potential for injury, and then
2 also the uncertainty about the chick being able
3 to position itself exactly in the right
4 position.

5 Q. Right, but I guess that wasn't quite
6 my question.

7 Do you know if, as of 2015, in the
8 hatchery art it was known to present chicks in
9 single file during the processing of day-old
10 chicks?

11 A. I mean, it -- the systems that I can
12 recall, I don't remember single file for -- for
13 this purpose, for imaging. I just don't recall.
14 I don't recall the exact date. I remember
15 seeing it, but I couldn't -- I don't recall a
16 date.

17 Q. And you said that you remember seeing
18 it.

19 Do you remember seeing single file
20 processing of chicks in a hatchery at some
21 point?

22 A. Well, that's what I'm trying to

1 recall. The systems that I recall seeing the
2 chicks were -- the hatchery process itself, all
3 of the ones that I can recall, they were -- they
4 were hatched in a tray, and the tray had -- you
5 know, I want to say they were 32 and a half
6 dozen, a standard flat. So there would be one
7 or two flats in those for the hatchery cabinets.

8 Windows -- windows are dispensed
9 after the chicks hatch. The conveyor systems
10 themselves would have an aggregation of chicks.

11 I don't -- I don't recall a single --
12 I don't recall a single file chick sorting
13 system right now.

14 Q. Okay. That's all. I was just
15 curious about it. Thank you.

16 All right. I think we've talked
17 enough about Yavnai.

18 Can we go now to another one of the
19 prior art references which is Gershman. That, I
20 believe, is Exhibit 1003.

21 (Exhibit 1003 was marked for
22 identification.)

1 THE EXHIBIT TECHNICIAN: Stand by.

2 MR. OLLIS: And, Dr. Keener, I've
3 just -- and also, Counsel. I'm guessing I might
4 have 30 to 45 minutes left.

5 I don't know if you would like to
6 take a break now, and then continue on, or if
7 you'd like to go a little further.

8 Do you have a preference just from a
9 timing standpoint?

10 MR. ROBSON: When you say "break,"
11 you mean -- you mean lunch, or just, like, a
12 ten-minute break?

13 MR. OLLIS: Either one, honestly. I
14 mean, whatever is convenient for Dr. Keener.

15 We could do -- I was thinking ten
16 minutes, and that people would probably prefer
17 just to have a short 5- or 10-minute stretch,
18 and then continue on and finish it. But if the
19 preference would be to have lunch, for a lunch
20 break, we could do that, too.

21 I don't know what --

22 BY MR. OLLIS:

1 Q. Dr. Keener, you're the witness here,
2 so I don't know if you have a preference.

3 A. I would say let's take a short break,
4 and then continue. I'm fine with that, yep.

5 Q. Okay.

6 MR. OLLIS: So ten minutes?

7 Is that good if we come back at noon
8 again?

9 MR. ROBSON: Yes. Let's do that.

10 MR. OLLIS: All right.

11 THE WITNESS: Thank you.

12 THE EXHIBIT TECHNICIAN: Going off
13 the record.

14 (A short recess was taken.)

15 BY MR. OLLIS:

16 Q. Welcome back again, Dr. Keener.

17 A. Thank you.

18 Q. I'd like to shift to talk a little
19 bit about Gershman, and maybe we could start
20 with showing paragraph 40 of your declaration.

21 THE EXHIBIT TECHNICIAN: So if we
22 could flip to that?

1 That's, again, Exhibit 2002, PDF page
2 19, and there's some diagrams towards the bottom
3 half of that page. Thank you.

4 BY MR. OLLIS:

5 Q. Dr. Keener, do you have that in front
6 of you in paper as well?

7 A. Yes, I do.

8 Q. I mean, you're welcome to just look
9 at the screen, but I just want to make sure
10 you're with me on --

11 A. Yes. Thank you.

12 Q. Thank you.

13 Now, you referenced earlier, I think
14 this morning, that you had had some figures
15 prepared for your declaration; is that correct?

16 A. Yeah. The figures that are
17 incorporated within my declaration --

18 Q. Okay.

19 A. -- were prepared at my request.

20 Q. And are these figures that are shown
21 in paragraph 40 of your declaration, labeled
22 Step 1, Step 2, Step 3, and Step 4, some of

1 those figures that were prepared at your
2 direction?

3 A. Yes, they are.

4 Q. Was anyone else involved in preparing
5 these figures shown in paragraph 40 aside from
6 yourself?

7 A. I don't know the individuals. These
8 were prepared at my request, and so the law firm
9 had someone that developed these, and then I
10 reviewed them and approved them.

11 Q. Okay. But you were the one that came
12 up with the -- what should be displayed or shown
13 in each of these figures; is that correct?

14 A. Yes. These are -- these are critical
15 distinctions between the different activities
16 that are described in Gershman, and so I felt it
17 necessary to elaborate on those for the -- the
18 patent review board.

19 Q. Okay. And how did you come up with
20 this four-step process that's depicted here?

21 A. Well, it -- I guess when I -- when I,
22 you know, look at what Gershman was describing,

1 you know, he shows the plate within Gershman,
2 and there's a single chick. There's some --
3 there are some aspects that aren't highlighted
4 here because they're not relevant to what I'm
5 describing. So, for instance, this doesn't
6 describe backlighting as an example, but -- and
7 it doesn't show the hand of the individual. It
8 just shows, you know, this representation of
9 this drop device that he describes.

10 But in any case, I looked at what he
11 was representing within his -- I would call it,
12 you know, just a technical note. It's not
13 really a paper. It's not a patent by any means,
14 but within this technical note, and then I
15 created this to represent what a person of
16 ordinary skill in the art would understand are
17 the steps involved that he was -- that he was
18 describing in regards to putting a chick on this
19 plate, having a chick free-fall, the chick open
20 its wings, and as a result of opening the wings,
21 one could capture the image, and then the chick
22 would arrive back on the plate after the

1 free-fall. So that's what this is representing
2 just in a visual form.

3 Q. Okay. And it's your understanding
4 that this visually accurately captures what
5 Gershman would teach to a person of ordinary
6 skill in the art; is that correct?

7 A. That is correct, yes.

8 Q. Okay. And one of the points that
9 you -- and you bolded it and underlined just at
10 the top line that's showing on the screen there.

11 MR. OLLIS: Maybe we could go down
12 just a little bit more so we could see a little
13 bit more context. Other direction. Sorry. Up.
14 Wrong instructions. Thank you.

15 BY MR. OLLIS:

16 Q. There's a sentence that says:
17 There's only two options for Gershman's plate.
18 It's either stationary and supporting a chick or
19 moving and not supporting the chick.

20 And then bolded and underlined "but
21 never moving and supporting a chick."

22 Now, do you see that?

1 A. Yes, I do. I've highlighted this
2 fact because this is what a person of ordinary
3 skill in the art at the time of, you know, 2015
4 would understand was being presented in
5 Gershman, and this distinguishes it from the
6 '124 in my opinion, again, because in Gershman,
7 he specifically describes in detail how to
8 accelerate this plate so that the chicken is --
9 sorry -- so the chick is never supported.

10 Q. Okay. And, again, to confirm, it's
11 your understanding that in Gershman, the chick
12 is never on the moving plate.

13 Is that correct?

14 A. When the plate --

15 MR. ROBSON: I'm sorry.

16 Objection to form.

17 THE WITNESS: The chick is never on
18 the plate when the plate is moving.

19 It's a movable plate, and I've
20 detailed that in more explanation later, but
21 when the plate is moving, the chick is -- is not
22 supported on the plate.

1 BY MR. OLLIS:

2 Q. Okay. It's not supported and, in
3 fact, I think you just said earlier it's never
4 even on the moving plate in Gershman; is that
5 correct?

6 A. That's correct.

7 Q. And following up on this, if we go
8 down to paragraph 43, and at this point, Dr.
9 Keener, this paragraph I believe is discussing
10 the Step 3 of your illustration of Gershman; is
11 that correct?

12 A. That's correct. And if I -- I'll
13 just pull up Gershman. I have that here. I
14 just wanted to -- but I believe that's correct.
15 This is the -- this is the point where he talks
16 about free-fall, yes.

17 Q. Okay. But just confirming the
18 understanding, at Step 3 -- your sentence in
19 paragraph 43, excuse me, says: "At Step 3,
20 shown in the cropped figure below, the plate
21 comes to a full stop, before the chick lands on
22 it."

1 Did I read that correctly?

2 A. That's correct. Yes. You've read
3 correctly.

4 Q. And that's your understanding of how
5 a person of ordinary skill in the art would
6 understand Gershman; is that correct?

7 A. Yes.

8 Q. In paragraph 68 of your declaration,
9 see if I can -- if I wrote down the right
10 paragraph. Yes.

11 MR. OLLIS: If we could go to
12 paragraph 68, please, for a moment?

13 That's on PDF page 43.

14 BY MR. OLLIS:

15 Q. Do you have that with you?

16 And you see there's a sentence --

17 A. Yes.

18 Q. -- maybe two-thirds of the way down
19 that says: "As any POSITA would have known,
20 baby chicks are inherently fragile."

21 Do you see that?

22 A. Yes, I do.

1 Q. And is that still your opinion?

2 A. Yes, they are.

3 Q. And what's your understanding of
4 "inherently fragile" that you're referring to
5 here?

6 A. So when -- when chicks are hatched,
7 they have limited -- limited energy. They've
8 consumed all of that in terms of the embryo
9 development. So they're very fragile in terms
10 of, you know, any type of, you know, shock, any
11 type of -- you know, stimulations have to be
12 very, very managed, very precisely. And so, you
13 know, this -- this inherently -- you know, the
14 idea of dropping chicks, you know, or, you know,
15 handling of chicks, restraining chicks, they're
16 just -- inherently, it will just lead to
17 injuries. And, you know, I've observed these
18 types of things.

19 When there's aggregation of chicks,
20 you know, when they -- when they dump them out
21 sometimes, there will be some stimulation, a
22 loud noise, and they'll all basically run to a

1 corner and pile on top of each other, and the
2 ones on the bottom suffer as a result.

3 Q. Okay. So are you referring primarily
4 though to the fact that they don't have much
5 energy when they're first hatched because all
6 the -- you know, the -- that's already been used
7 in growing and getting to the hatching point as
8 opposed to physically fragile?

9 A. They're physically fragile also
10 because they haven't really developed beyond --
11 you know, it's no different than a human giving
12 birth to a baby. There's limited -- you know,
13 there's just so many potential disease risks and
14 injury risk at that point.

15 So fragile here, when I talk about
16 inherently fragile, it means that both from a,
17 you know, a disease standpoint, a physical
18 handling standpoint.

19 Within my declaration I talk a lot
20 about all of these restraint systems, and my
21 opinion is that all of these that have restraint
22 are not going to be -- be able to be

1 successfully implemented in -- in these large
2 industrial processes because of -- of just the
3 inherent risk of injury.

4 You know, poles for instance. I've
5 talked about the poles in Yavnai. We've talked
6 about that, but, you know, these chicks and
7 their wings, you know, the bones are very small.
8 The legs are very small. They're very fragile.

9 You know, I've seen -- I've seen, for
10 instance, where a chick would, you know, get
11 picked up and dropped, and it would have a
12 broken leg, for instance, you know, just in
13 handling. So there's a lot of fragility.

14 Q. Dr. Keener, you mentioned earlier, we
15 were talking about the different sizes of
16 hatcheries, and I think you talked -- we talked
17 a little bit, and you explained a little bit
18 about the small, medium, and large hatcheries.

19 Do you recall that discussion?

20 A. I do, yes.

21 Q. And the larger ones are -- and I
22 think you alluded to or referenced this in your

1 declaration, could be handling many, even
2 hundreds of thousands of chicks in a day; is
3 that correct?

4 A. Yeah. The one reference I have was
5 in the range of 500,000, and that was -- that
6 was pulled from the Tao patent, but it's in that
7 range of hundreds of thousands to even millions,
8 yes.

9 Q. Right. And those larger systems have
10 many conveyors for moving this quantity of
11 chicks around inside the hatcheries as of 2015;
12 is that correct?

13 A. They do, yes.

14 Q. Okay. And did you have an
15 understanding as of 2015 whether in large
16 hatcheries or, frankly, any hatcheries the
17 conveyors would drop the chicks in some parts of
18 the process from one level to another?

19 A. So I've seen those types of drops,
20 and generally the drops are more of, like, what
21 I would call a slide. So -- and this is shown
22 also in the -- in the Tao embodiment. There's a

1 bit of a conical shape, and when the chicks are
2 deposited, they would kind of slide down a slide
3 more so than a direct drop because that would
4 allow them to, you know, reduce the amount of
5 force that would be impact on their feet or on
6 their legs.

7 So those systems in an industrial
8 process -- and I recall observing those in that
9 time frame of 2015 -- they would have certain
10 features that would accommodate or at least
11 reduce this or account for this fragility.

12 Q. Okay. And one of those -- an example
13 would be, as you mentioned, a slide, but would
14 there -- do you recall examples in 2015 of these
15 systems just having drops of -- well, pick a
16 number, 12 inches or more for example?

17 A. I -- I don't recall that right now.

18 Q. Okay.

19 A. I can't say. I don't recall.

20 Q. That's fine.

21 MR. OLLIS: If we can go to -- back
22 to paragraph 58.

1 BY MR. OLLIS:

2 Q. I think this is still talking about
3 Gershman of your declaration.

4 MR. OLLIS: So that will be PDF
5 page -- so it's on pages 37 and 38 of the PDF.

6 BY MR. OLLIS:

7 Q. Okay. And -- sorry. It's a big
8 paragraph. Let me find the sentence I was
9 looking for.

10 Okay. If we go to the middle of that
11 next page where most of paragraph 58 is, about,
12 oh, gosh, seven or eight lines down, there's a
13 sentence that says: "In other words, Gershman
14 would introduce a full stop in any lateral
15 conveyance system, effectively pausing the
16 lateral conveyance of the chick so that the
17 sexing process can be completed, but only in a
18 vertical direction."

19 Do you see that sentence?

20 A. I do, yes.

21 Q. Okay. And I'm just confirming that
22 it's your understanding that a person of

1 ordinary skill in the art would understand that
2 Gershman would introduce a full stop in the
3 lateral conveyance system; is that correct?

4 A. As -- as Gershman describes in his --
5 you know, as, again, a technical bulletin is
6 what I would call it, you know, he's silent on a
7 lot of details.

8 So if I read what he says and look at
9 the figures that he has, this was -- this was my
10 interpretation that I think also represented a
11 person of ordinary skill in the art.

12 So the answer is that as I've stated
13 here, that it would -- you know, to have these
14 plates that are going to have to be either
15 manually or automatic -- automated to put a
16 chick, drop a chick, you know, capture an image
17 of a chick, clean a plate. There's a lot of
18 different complexities to this that would make
19 it unworkable in a -- in a high throughput
20 system.

21 Q. Right, but, again, just confirming,
22 it's your understanding that it would introduce

1 a full stop in the conveyance system as you read
2 Gershman and as you believe a person of ordinary
3 skill in the art would read Gershman?

4 A. I believe that it would, yes.

5 Q. Okay. How about the system of the
6 claim of the '124 patent?

7 Does that introduce a full stop into
8 a conveyance system?

9 A. So the '124 patent -- and I've talked
10 about this in my declaration -- is a continuous
11 process, and that's one of the -- as I see, one
12 of the, you know, innovative features is that
13 it's a continuous or, you know, it's implemented
14 as a continuous process with these conveyors
15 that would be able to fully support the chicks,
16 transport -- transporting the chicks
17 unrestrained, be able to capture images,
18 classify those images according to the database,
19 and to do that all in a continuous manner.

20 Q. Okay. Thank you.

21 If we can go -- and I think Gershman
22 comes up in a couple different parts of your

1 declaration. So now I'd like just to go for a
2 moment to paragraph 174.

3 THE EXHIBIT TECHNICIAN: Sorry.

4 Counsel, you cut off for a second.

5 What was that?

6 MR. OLLIS: Oh, I'm sorry. Paragraph
7 174 --

8 THE EXHIBIT TECHNICIAN: In this same
9 document?

10 MR. OLLIS: -- which is -- let's see.

11 It's a big paragraph.

12 BY MR. OLLIS:

13 Q. It's numbered pages 100 -- PDF pages
14 109 and 110 of your declaration, numbered page
15 106.

16 THE EXHIBIT TECHNICIAN: Okay.

17 We're on page 109.

18 You said paragraph -- what number
19 paragraph?

20 MR. OLLIS: That's the one, 174.

21 THE EXHIBIT TECHNICIAN: Got it.

22 BY MR. OLLIS:

1 Q. But it continues onto the next page,
2 and I've got to find the sentence. I forgot how
3 big this paragraph was.

4 Just a moment.

5 Oh, okay. So if we look at this
6 paragraph, again, maybe seven or eight lines
7 down, do you see this?

8 It says: "Similarly, there is no
9 discussion or disclosure of how chicks should be
10 centered on the movable plate such that, when
11 the plate is dropped, their wings won't hit the
12 sidewalls during the fall."

13 Do you see that sentence there?

14 A. Yes, I do.

15 Q. Which sidewalls were you referring to
16 in Gershman?

17 A. This was a statement regarding the --
18 the drop.

19 Q. Um-huh.

20 A. So if one considers this plate to be
21 movable, and the pictures represent that, that
22 there would inherently have to be some, you

1 know, barriers or the chicks themselves are just
2 physically going to walk off the sides of this
3 plate at a fairly -- you know, at whatever
4 height that would be set.

5 So it would be understood by someone,
6 a person of ordinary skill in the art, that
7 there would have to be some -- there would have
8 to be some type of a sidewall for just
9 containing this chick on the plate.

10 The other aspect of that, when one
11 thinks about how that would be implemented,
12 again, very limited details in Gershman, but the
13 comment that I made here or the point that I was
14 making is that, you know, the imaging that he
15 talks about, in order for that to be successful,
16 the chick has to be centrally located on the
17 plate for his camera to capture the image. And
18 if one looks at the images, you know, you can
19 see how close in some instances those wing tips
20 are to the edge of the image of the camera.

21 So for this to be successful, there
22 would have to be some type of sidewalls that

1 would allow the centering of this chick during
2 the fall that it would remain within the field
3 of view of the camera or the image capture
4 device.

5 Q. Okay. Thank you. That clarifies my
6 understanding there.

7 Okay. I think we're done with
8 Gershman.

9 If we could pull up just for one
10 moment -- why don't we both go directly to your
11 declaration. We can see if we need to pull it
12 up or not.

13 MR. OLLIS: If we go to paragraph
14 184, which I believe is going to be a little
15 further down, but not too much further, I have
16 roughly pages probably 116 and 117, yeah. Of
17 the PDF.

18 Oh, there we go.

19 BY MR. OLLIS:

20 Q. You even have an image already from
21 the reference.

22 But do you see paragraph 184, the

1 first part of it, maybe even all of it --

2 A. Yeah.

3 Q. -- on the screen there from your
4 declaration?

5 A. Yes.

6 Q. And do you understand what -- there's
7 part of a patent figure being shown there.

8 Do you know what that is?

9 A. I believe that's the figure from Tao.
10 I could confirm that. I don't see within that,
11 but it's 1007.

12 Q. Yeah. I'll volunteer for the record,
13 and if you want to scroll back to the previous
14 page, I believe this is Goodwin.

15 A. Oh, sorry. Yes, Goodwin. It's
16 the -- it's the -- yes. It's the -- it's the
17 1975 --

18 Q. Right.

19 A. -- patent, yes.

20 Q. Yes.

21 A. That's correct.

22 Q. Okay. All right. So we agree that

1 part of the figure that's Exhibit 1007 that's
2 reproduced in paragraph 184 is from Goodwin.

3 And in your paragraph 184, the second
4 sentence, you state: "A POSITA would have been
5 aware of the risk, and would have understood
6 that because the conveyor 18 is substantially
7 higher off the ground than a chick is expected
8 to be able to fall without injury, chicks would
9 likely be injured by such a drop."

10 Do you see that sentence?

11 A. I do, yes.

12 Q. And just looking at this figure,
13 which drop are you referring to if it's shown on
14 the figure?

15 Where -- if can you describe where in
16 this figure that would -- the drop is that
17 you're mentioning?

18 A. Let me just -- if I may, just take a
19 minute and just review the full context of this?

20 Q. Sure. Please. Please take your
21 time.

22 A. Okay. So if you can just repeat the

1 question or just have --

2 Q. Sure. So I was -- I was interested
3 in the second sentence of your declaration where
4 you mention "that because the conveyor 18 is
5 substantially higher off the ground than a chick
6 is expected to be able to fall without injury,
7 chicks would likely be injured by such a drop."

8 And I was just trying to understand
9 which drop you were referring to in the figure
10 here.

11 A. Well, that would be the -- that would
12 be the drop at the -- at the end of the conveyor
13 18.

14 Q. Uh-huh.

15 A. And this was in reference to the
16 Pierre-Goodwin combination where there would be
17 image capturing or potentially image capturing
18 at that point.

19 Q. Okay. So if -- and, again, when you
20 say the end of item 18 in the figure shown in
21 your paragraph 184, is that right at the end of
22 where there's another labeled element 21 on the

1 right side there?

2 A. That's -- that's correct. That would
3 be the end of the conveyor where I was
4 referencing the drop.

5 Q. Okay. And that's the point in the
6 figure where you're concerned that the drop
7 would be so large that it could injure the
8 chick; is that correct?

9 A. That's correct. The drop would have
10 to be sufficient that the chick would open its
11 wings sufficiently for an image to be captured,
12 and at the same time be able to, you know,
13 maintain the chick being healthy when it -- when
14 it ends that drop or, you know, basically ends
15 up on -- on the bottom side of that, whether
16 that's another conveyor or whether that's a
17 platform.

18 Q. And do you have a sense of how far of
19 a drop would -- that would be that would be far
20 enough for the chick to open its wings and have
21 the image captured and still land below it?

22 A. I don't. The prior art is limited in

1 description of that. You know, a person of
2 ordinary skill in the art would look at that and
3 say significant experimentation would be needed,
4 and that would be my -- that's my opinion; that
5 you would have to do experimentation on that to
6 determine what would be that, both the drop for
7 injury and then the drop -- you know, and
8 whether or not the drop to prevent injury would
9 be sufficient to capture the image. None of
10 that has been clearly articulated in the prior
11 art.

12 Q. Right. But you, nonetheless, of the
13 view, you know, is not -- the amount of the drop
14 is not, as you said, clearly articulated in the
15 prior art, you're still of the view that "the
16 conveyor 18 is substantially higher off the
17 ground than a chick is expected to be able to
18 fall without injury."

19 Is that correct?

20 A. That's correct because right now, the
21 unknown, there is that -- is that drop. My
22 observations of these -- of these chicks are

1 that -- that they're very fragile, as I stated
2 before, and so, you know, any significant drop
3 could cause injury or, you know, if they're
4 flapping their wings, they could get injured
5 just from hitting the conveyor as they -- as
6 they fall off, depending on how quickly they
7 flap their wings.

8 There's a lot of potential for injury
9 and -- you know, in the process, so, yeah. The
10 opinion that I have is that -- is that I believe
11 this would have a -- a risk of injury with this
12 drop.

13 Q. Okay. Thank you.

14 We're almost done.

15 Towards the end of your
16 declaration -- I think it's in paragraph --
17 maybe starting about 188, if I've got it
18 correctly, there's a section on secondary
19 considerations of non-obviousness to support
20 validity.

21 Do you recall that section, numbered
22 pages --

1 A. I do.

2 Q. -- 115 and PDF page 118 is about
3 where it starts.

4 A. Yes, I do.

5 Q. Okay. And the first subheading under
6 that section before paragraph 188 is "Long-felt
7 but unmet need."

8 Do you recall that, or do you see
9 that?

10 A. Yes, I do.

11 Q. And is it your opinion that the -- in
12 the subject matter claimed in the '124 patent
13 met these unmet needs?

14 A. It may. You know, the -- I don't
15 have information about -- about the commercial
16 systems, if there are commercial systems.

17 What I can say is the unmet needs
18 that's -- that I've presented here, you know,
19 that's been -- that's been around since prior to
20 my engagement within the industry. You know,
21 this accuracy high throughput, doing that with,
22 you know, prioritizing the welfare.

1 What I can say is the -- my review of
2 the '124 patent and the claims within that, it
3 appears to be, you know, an elegant solution,
4 but I don't know whether -- whether the
5 commercial system itself embodies all of those
6 elements. I don't know.

7 Q. Okay. Do you know if the commercial
8 system has been -- well, I'll leave it at that.
9 I think you've answered the question.

10 MR. OLLIS: If you can give me maybe
11 three minutes, we may be done. I just want to
12 caucus for one moment.

13 Maybe -- maybe we come back in about
14 four minutes at 12:35 on the screen here, and we
15 might be finished, at least from my side, unless
16 counsel has follow-up questions.

17 MR. ROBSON: I think that's okay with
18 us.

19 THE WITNESS: Okay.

20 MR. OLLIS: Okay. We'll be right
21 back.

22 (A short recess was taken.)

1 BY MR. OLLIS:

2 Q. Dr. Keener, I have no further
3 questions at this time.

4 Thank you for taking the time to
5 answer the questions this morning.

6 A. Thank you.

7 MR. ROBSON: Dr. Keener, I just have
8 a few follow-up questions for you.

9 Actually, can we -- why don't we
10 take a -- why don't we take like ten minutes.

11 MR. OLLIS: Okay.

12 MR. ROBSON: Okay.

13 (A short recess was taken.)
14

15 EXAMINATION

16 BY MR. ROBSON:

17 Q. Good afternoon, Dr. Keener. I just
18 have a few follow-up questions for you.

19 Dr. Keener, can you refer to Exhibit
20 1001, which is the '124 patent?

21 And I'd ask you to turn to claim 1 in
22 that.

1 A. And I have a -- I have a hard copy in
2 front of me. I don't know if you want to put it
3 up on -- if it matters. I can just refer to my
4 hard copy.

5 Q. I think it's okay if you just refer
6 to your hard copy.

7 A. Thank you.

8 Q. Do you recall earlier today when
9 counsel was asking you about the four clauses we
10 see here in claim 1?

11 A. Yes.

12 Q. Okay. And just to reiterate, the
13 first one cites -- well, strike that.

14 I'm going to -- I'm going to direct
15 you to the last clause that begins "a computer
16 processor."

17 Do you see that?

18 A. I do, yes.

19 Q. Okay. And just to read that, it
20 recites, "a computer processor having a database
21 of images of male and female wing patterns for
22 the particular breed, the computer processor in

1 communication with the image capture device,
2 whereby the image capture device captures at
3 least one image of the chick and transmits it to
4 the computer processor where the image is
5 processed and compared to the database to
6 determine the sex."

7 Did I read that correctly?

8 A. Yes.

9 Q. Okay. And I want to refer you to the
10 end of that clause where it says "the image is
11 processed and compared to the database."

12 Do you see that?

13 A. Yes, I do.

14 Q. In your understanding of claim 1 --

15 A. Yeah.

16 Q. -- that the image processing and
17 comparison referred to there occur while the
18 chick is still supported by the moving platform?

19 A. It does not. It does not have that
20 requirement. So the processing can occur
21 whether the chick is on the moving platform, you
22 know, unrestrained, or whether it has been --

1 you know, exited the moving platform.

2 Q. Okay. Thank you, Dr. Keener. I have
3 no further questions at this time.

4 MR. OLLIS: I have no further
5 questions either. Thank you.

6 THE COURT REPORTER: Counsel, could I
7 understand what your orders are on this
8 transcript, what you'd like to see and when,
9 please?

10 MR. OLLIS: I think we may have
11 already put an order in.

12 THE COURT REPORTER: What I have is a
13 daily copy. You want it by tomorrow.

14 Is that right?

15 MR. OLLIS: Yeah. I don't know if we
16 really need it then, but I think that was what
17 was requested. That's fine.

18 THE COURT REPORTER: Is that what
19 you'd like?

20 MR. OLLIS: Yeah, please.

21 THE COURT REPORTER: Okay.

22 Do you need a rough draft?

1 MR. OLLIS: No.

2 THE COURT REPORTER: No rough.

3 Okay. And how about for you,
4 Mr. Robson?

5 MR. ROBSON: We'll do the same,
6 delivery by tomorrow, yeah.

7 THE COURT REPORTER: And no rough, or
8 do you want a rough?

9 MR. ROBSON: No, not if we're getting
10 it so quickly. No rough.

11 THE COURT REPORTER: Okay.

12 Thank you, everyone. Have a nice
13 afternoon.

14 (The deposition was concluded at
15 12:42 p.m. EST)

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Signed on the _____ day of
_____, 20____.

KEVIN M. KEENER, Ph.D., P.E.

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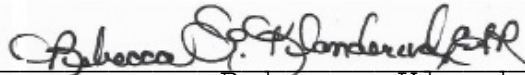
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I, REBECCA KLANDERUD, Registered
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Reporter and Notary Public, do hereby certify:

That KEVIN M. KEENER, Ph.D., P.E., the
witness whose deposition is hereinbefore set
forth, was duly sworn by me before the
commencement of such deposition, and that such
deposition was taken before me and is a true
record of the testimony given by such witness.

I further certify that the adverse
party, TARGAN, INCORPORATED, was represented by
counsel at the deposition.

I further certify that the deposition of
KEVIN M. KEENER, Ph.D., P.E., was taken remotely
via Zoom communication, with the witness being
physically located in New York City, on
Thursday, January 23, 2025 at 10:06 a.m. EST to
12:42 p.m. EST.



Rebecca Klanderud
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