

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CEVA SANTÉ ANIMALE S.A.,
EGG-CHICK AUTOMATED TECHNOLOGIES S.A.S, and
CEVA ANIMAL HEALTH, LLC
Petitioners,
v.
TARGAN, INC.,
Patent Owner.

Case No. IPR2024-00595
U.S. Patent No. 10,806,124

PATENT OWNER'S NOTICE OF APPEAL

Office of the General Counsel
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, Virginia 22313-1450

via P-TACTS
Patent Trial and Appeal Board

via e-mail to efileSO@uspto.gov
Director of the United States Patent and Trademark Office

via CM/ECF
United States Court of Appeals for the Federal Circuit

Notice is hereby given, pursuant to 37 C.F.R. § 90.2(a) and 35 U.S.C. §§ 141(c), 142, and 319, that Patent Owner Targan, Inc. (“Patent Owner”) appeals to the United States Court of Appeals for the Federal Circuit from the Final Written Decision of the Patent Trial and Appeal Board in Case No. IPR2024-00595, entered July 24, 2025 (Paper No. 39) (attached as Exhibit A). This notice is timely filed within 63 days of the issuance of the Final Written Decision. For the limited purpose of providing the Director with the information specified in 37 C.F.R. § 90.2(a)(3)(ii), Patent Owner indicates that the issues on appeal may include, but are not limited to, the following:

1. the Board’s determination that that claims 1-15 of U.S. Patent No. 10,806,124 (“the ’124 Patent”) have been shown to be unpatentable, including any underlying questions of law or fact;
2. any finding, determination, judgment, or order supporting or related to the Final Written Decision decided adversely to Patent Owner.

Simultaneous with this submission and in accordance with 37 C.F.R. § 90.2(a), a copy of this Notice of Appeal is being filed with the Director of the United States Patent and Trademark Office, filed with the Patent Trial and Appeal Board, and served upon Petitioner in accordance with 37 C.F.R. § 42.6(e). In addition, this Notice of Appeal, along with the required docketing fees, is being filed

with the Clerk's Office for the United States Court of Appeal for the Federal Circuit
in accordance with Fed. Cir. R. 15(a)(1).

Respectfully submitted,

Dated: September 19, 2025

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CERTIFICATE OF FILING

I certify that, pursuant to 37 C.F.R. § 90.2(a), the foregoing notice of appeal was filed electronically on the date signed below with the Director of the United States Patent and Trademark Office by e-mailing efileSO@uspto.gov.

I certify that the foregoing notice of appeal was filed electronically on the date signed below with the Patent Trial and Appeal Board via P-TACTS.

I certify that, pursuant to 37 C.F.R. § 90.2, Federal Rule of Appellate Procedure 15(a)(1), Federal Circuit Rule 15(a)(1) & 52, and Manual of Patent Examining Procedure 1216.01, the foregoing notice of appeal was filed electronically and the requisite fee was paid on the date signed below with the United States Court of Appeals for the Federal Circuit via CM/ECF.

Dated: September 19, 2025

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing document
was served on September 19, 2025, by email at the following addresses:

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EXHIBIT A

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CEVA SANTÉ ANIMALE S.A.,
EGG-CHICK AUTOMATED TECHNOLOGIES S.A.S, and
CEVA ANIMAL HEALTH, LLC.,
Petitioners,

v.

TARGAN, INC.,
Patent Owner.

IPR2024-00595
Patent 10,806,124 B2

Before KARL D. EASTHOM, MICHELLE N. WORMMEESTER, and
BRIAN P. MURPHY, *Administrative Patent Judges*.

MURPHY, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
Determining Some Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

Ceva Santé Animale S.A., Egg-Chick Automated Technologies S.A.S, and Ceva Animal Health, LLC (collectively, “Petitioner”) filed a Petition pursuant to 35 U.S.C. § 311 requesting institution of *inter partes* review of claims 1–18 of U.S. Patent No. 10,806,124 B2 (Ex. 1001; “the ’124 patent”). Paper 1 (“Pet.”). Targan, Inc. (“Patent Owner”) timely filed a Preliminary Response. Paper 8 (“Prelim. Resp.”). Upon review of those papers and supporting evidence, we instituted *inter partes* review of claims 1–18 pursuant to 35 U.S.C. § 314 based on the challenges set forth in the Petition. Paper 9.

Subsequent to institution, Patent Owner filed a Response. Paper 16 (“Resp.”). Petitioner filed a Reply and Patent Owner filed a Sur-Reply. Paper 19 (“Reply”); Paper 28 (“Sur-Reply”). Patent Owner filed a Motion to Strike the expert declaration of Mr. Shawn LeCroy (Ex. 1008) and “all arguments in Petitioners’ Reply (Paper 19) that rely thereon.” Paper 22 (“Motion” or “Mot.”). Petitioner filed an opposition to Patent Owner’s Motion. Paper 23 (“Mot. Opp.”).

We have jurisdiction under 35 U.S.C. § 6. This is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of claims 1–18 of the ’124 patent. We conclude that Petitioner has demonstrated by a preponderance of the evidence that claims 1–15 of the ’124 patent are unpatentable. We conclude that Petitioner has not demonstrated by a preponderance of the evidence that claims 16–18 of the ’124 patent are unpatentable.

A. Real Parties in Interest and Related Matters

Petitioner identifies Ceva Santé Animale S.A. as the real party in interest. Pet. 1. Petitioner also states that Ceva Santé Animale S.A. “is the sole owner of

Egg-Chick Automated Technologies S.A.S. and Ceva Animal Health, LLC.” *Id.* Patent Owner, Targan, Inc., identifies itself as the real party in interest. Paper 6, 2.

Patent Owner and Petitioner indicate there are no related matters. *Id.*; Pet. 1.

B. The '124 Patent

The '124 patent, titled “System and Method of Determining the Health and Gender of a Chick,” is directed to a system for determining the health, gender, or other characteristics of a chick. Ex. 1001, Abstract (code 57), 1:14–19. The '124 patent describes how in the poultry production industry, there is a “need to quickly and efficiently inspect day old chicks to determine whether or not they are sufficiently healthy to withstand the rigors of the poultry production environment.” *Id.* at 1:57–60. It is also important to “ensure that the sexes are separated out as soon as possible,” which is done by inspecting the different “feather pattern and length at the bend in the wing” exhibited by male and female chicks, a process known as “feather sexing.” *Id.* at 1:64–67, 2:6–16. The claimed system allows a poultry producer to “quickly and automatically inspect day old chicks” to determine their health and gender. *Id.* at 2:21–40.

The '124 patent describes a computerized system of components and functions to determine a chick’s gender and health, “including the steps of providing a moving platform to support a chick, introducing at least one stimuli to cause the chick to spread its wings and capturing at least one image of the chick as it spreads its wings.” Ex. 1001, 3:8–10. The '124 patent describes a first embodiment where chicks move “in single file fashion” supported on a moving platform, such as a conventional belt conveyor, depicted in Figure 1 reproduced below:

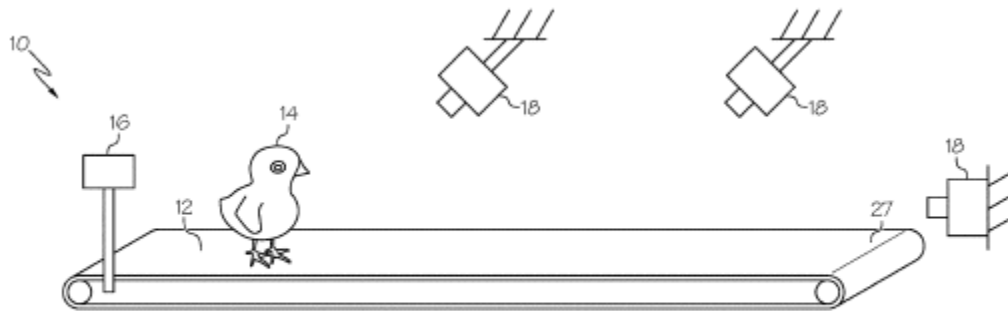


FIG. 1

Id. at 3:50–53, Fig. 1. In Figure 1, conveyor 12 transports a chick from left to right toward cameras 18 located “along the pathway.”¹ *Id.* at 3:55–62.

Figure 6 depicts another embodiment reproduced below:

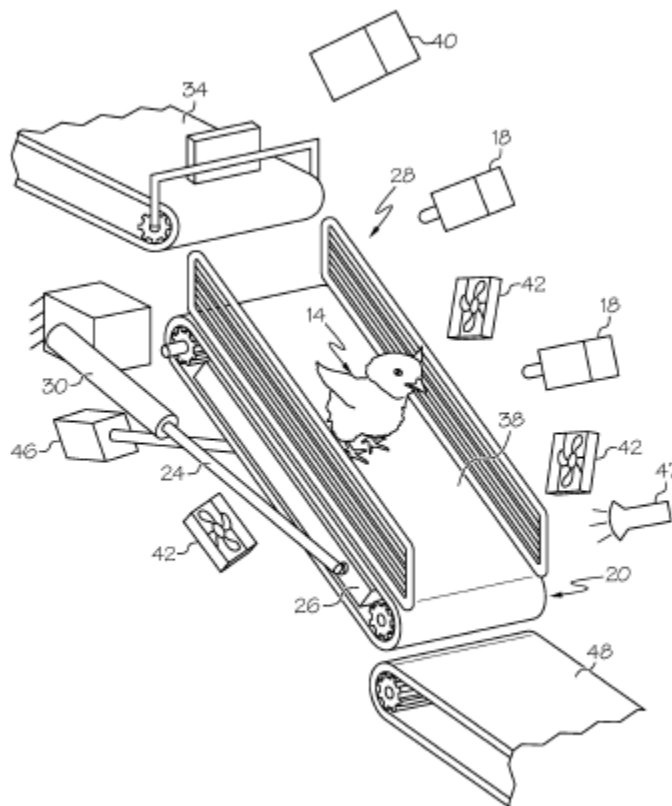


FIG. 6

¹ Quotations from patent documents may omit or de-emphasize bold numerals.

Id., Fig. 6. Figure 6 illustrates a chick moving downwardly on an angled conveyor toward various stimuli and cameras. Angled conveyor 38, “upwardly blowing air” from fans 42, and the “vibrating surface” of the conveyor (vibrating mechanism 46) act as stimuli causing the chick to open its wings. *Id.* at 6:10–26, Fig. 6. The stimuli disrupt the chick’s balance such that “the chick begins to lift and flap its wings” so that “cameras 18 take images of the opened wing pattern” for comparison to a database of “images of male and female wing patterns” to determine the chick’s gender. *Id.*

C. Illustrative Claim

Claims 1, 6, and 9 are the independent claims. Claim 1, reproduced below, illustrates the claimed subject matter:

[1.0]² A system for determining the sex of a chick comprising:
[1.1] a moving platform to support an unrestrained chick of a particular breed;
[1.2] at least one stimuli to cause the chick to open its wings;
[1.3] an image capture device to capture at least one image of the chick; and
[1.4] a computer processor having a database of images of male and female wing patterns for the particular breed, the computer processor in communication with the image capture device, [1.5] whereby the image capture device captures at least one image of the chick and transmits it to the computer processor where the image is processed and compared to the database to determine the sex.

Ex. 1001, 6:54–67. Independent claims 6 and 9 are also “system” claims that recite similar limitations. *Id.* at 7:17–32, 7:40–8:16. The remaining challenged claims, 2–5, 7-8, and 10–18 depend, directly or indirectly, from claims 1, 6, or 9. *Id.* at 7:1–16, 7:33–39, 8:17–44.

² We adopt Petitioner’s claim limitation numbering system for convenience.

D. Prior Art and Asserted Grounds of Unpatentability

We instituted *inter partes* review based on the following grounds of unpatentability under 35 U.S.C. § 103:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/ Basis
1 and 3 (Ground 1)	103 ³	Gershman, ⁴ Pierre ⁵
1 and 3 (Ground 2)	103	Yavnai, ⁶ Pierre
1, 6, and 7 (Ground 3)	103	Pierre, Goodwin ⁷
1, 6, and 7 (Ground 4)	103	Pierre, Gershman
2 (Ground 5)	103	Pierre, Goodwin, Tao ⁸
8 (Ground 6)	103	Pierre, Gershman, Tao
2, 4, 5, and 9–15 (Ground 7)	103	Gershman, Pierre, Tao
2, 4, 8, and 9–18 (Ground 8)	103	Yavnai, Pierre, Tao

Pet. 4. Petitioner relies on the Declaration of Shawn LeCroy in support of the Reply. Ex. 1008. Patent Owner relies on the Declarations of Kevin M. Keener, Ph.D., P.E. and Lina J. Karam, Ph.D. in support of the Response and Sur-Reply. Ex. 2002; Ex. 2003.

II. CLAIM CONSTRUCTION

A. Level of Ordinary Skill in the Art

Petitioner states that the level of skill in the art “is apparent from the cited

³ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), includes revisions to 35 U.S.C. § 103 that became effective before the filing date of the application that led to the challenged patent. Hence, this *inter partes* review is governed by the provisions of AIA 35 U.S.C. § 103.

⁴ Gershman, Y., *A simple way to determine the sex of one-day poultry chickens (basic principles)*, The Papers of Independent Authors [online]; Vol. 28, DNA 2014 (Ex. 1003, “Gershman”).

⁵ FR No. 2909836A1, Pub. June 20, 2008 (Ex. 1004, “Pierre”).

⁶ US 2001/0035370 A1, Pub. Nov. 1, 2001 (Ex. 1005, “Yavnai”).

⁷ US Patent No. 3,994,292, Nov. 30, 1976 (Ex. 1007, “Goodwin”).

⁸ US Patent No. 6,396,938 B1, May 28, 2002 (Ex. 1006, “Tao”).

art.” Pet. 20–21 (citing *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995)). Petitioner submits that a person of ordinary skill in the art (“POSITA”) “would be familiar with techniques for assessing and transporting poultry in an industrial setting and would be familiar with visual and/or anatomical indicators of characteristics of a chick.” *Id.* at 21 (citing Ex. 1001, 2:6–16.). Petitioner also contends a POSITA would be “aware of image acquisition and processing techniques for automating chick assessment and chick sexing or have access to team members with this image processing knowledge.” *Id.* (citing Ex. 1006, 3:1–11). Petitioner’s expert, Mr. LeCroy, has a Bachelor of Science degree in Animal Science and 20 years of experience “in the field of hatchery automation which dates back to 2005.” Ex. 1008 ¶¶ 4–5.

Patent Owner submits a POSITA “would have had a Bachelor of Science degree in agricultural, industrial and/or electrical engineering and two years of work or research experience in the fields of automated capital equipment, industrial poultry sexing, and/or image processing.” Resp. 20 (citing Ex. 2002 ¶¶ 104–109; Ex. 2003 ¶¶ 32–34). Patent Owner’s expert in agricultural and food process engineering, Dr. Keener, has a Ph.D. degree in Food Process Engineering and design experience regarding “food conveyors, automated sorting equipment, industrial poultry production, and image processing.” Ex. 2002 ¶¶ 4–6. Although Patent Owner contends the level of skill of a POSITA should be higher than that proposed by Petitioner, Patent Owner represents that its arguments and supporting expert opinions “apply with equal force under either proffered level of skill.” Resp. 20.

In determining the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made;

sophistication of the technology; and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citing *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)). “These factors are not exhaustive but are merely a guide to determining the level of ordinary skill in the art.” *Daiichi Sankyo Co. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007). There is uncontested evidence in the record before us, including the ’124 patent, the Gershman, Pierre, Yavnai, Tao, and Goodwin references, and the background and qualifications of both sides expert witnesses that reflect the knowledge and experience of a POSITA, including knowledge of systems for assessing and transporting poultry in an industrial setting.

Patent Owner’s proposed skill level overlaps with Petitioner’s proposed skill level, and any differences would not alter the outcome of this proceeding. Therefore, we adopt Patent Owner’s proposed skill level with two modifications. A POSITA also could have a Bachelor of Science degree in Animal Science or similar discipline, and a POSITA would be familiar with techniques for assessing and transporting poultry in an industrial setting, such as visual and/or anatomical characteristics of a chick.

B. Claim Construction

We construe claim terms using “the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b). In this context, claim terms “are generally given their ordinary and customary meaning” as understood by a POSITA at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). “Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term

appears, but in the context of the entire patent, including the specification.” *Id.* at 1313. The “specification ‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’” *Id.* at 1315 (citation omitted). Accordingly, when construing a disputed claim limitation, “we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17).

Petitioner advocates for the “ordinary and customary meaning” of the claims and addresses the following claim language with particularity: limitation [1.1] - “*moving platform*” and “*unrestrained chick*,” and claim 9 - “*removing means for removing a chick from the moving platform*.” Pet. 15–20; Reply 3–6.

Patent Owner construes “*a moving platform to support an unrestrained chick*” in limitation [1.1] as “a platform in motion supporting an unrestrained chick as it transports the chick from a first location to a second location,” and “*an unrestrained chick*” as a chick “free to move as it naturally can while on the moving platform.” Resp. 21–25.

We focus on the parties’ dispute regarding the claim element “*an unrestrained chick*” in limitation [1.1]. We start with the language of the claim element in context and in view of the specification and prosecution history of record in this proceeding (Ex. 1002). We address the parties’ claim construction arguments below.

1. “*A moving platform to support an unrestrained chick*”

The claimed “*system for determining the sex of a chick*” recited in claim 1 comprises a series of separate components capable of carrying out functional steps described in the ’124 patent. The body of claim 1 recites:

[1.1] *a moving platform* to support an unrestrained chick of a particular breed;⁹

[1.2] *at least one stimuli* to cause the chick to open its wings;

[1.3] *an image capture device* to capture at least one image of the chick;¹⁰ and

[1.4] *a computer processor* having a data base of images . . . [1.5] where the image is processed and compared to the database to determine the sex.

Ex. 1001, 6:54–67 (emphases added). The claimed system is “for determining the sex of a chick,” and the recited system components use infinitive verb forms—“to support,” “to cause,” “to capture,” and “to determine”—each of which defines the functional capability of the recited component. “[T]he claims at issue here merely claim that the system ‘possess[es] the recited structure capable of performing the recited functions.’” *Mastermine Software, Inc. v. Microsoft Corp.*, 874 F.3d 1307, 1316 (Fed. Cir. 2017) (citation omitted).

The recited function of “*a moving platform*” in limitation [1.1] is “*to support an unrestrained chick*.” Independent claim 6 similarly recites “*a moving platform upon which an unrestrained chick is supported*.” The ’124 patent depicts embodiments of moving platforms (conveyors) supporting a chick moving toward image capture. *Id.* at 5:29–6:21, Figs. 1, 3, 6. The ’124 patent specification also uses lexicography to define a conveyor, which includes a moving platform:

The term conveyor is understood to mean any type of handling mechanism capable of transporting an object, in this case an animal, from a first location to a second location. The term conveyor shall include but not be limited to conveyor belts, moving platforms

⁹ The same language is recited in independent claim 9. Independent claim 6 recites “a moving platform upon which an unrestrained chick is supported.”

¹⁰ Claim 9 recites “the image capture device takes an image of the chick.”

Id. at 3:62–67; *see also* Reply 3 (“[Patent Owner’s] proposed interpretation of two phrases related to the ‘moving platform’ is consistent with Petitioner’s application of the claims”) (citing Resp. 21–24); Sur-Reply 4 (“the claimed platform must be **both** ‘moving’ and at the same time ‘support[ing]’ an unrestrained chick”). We now address the parties’ dispute regarding “*an unrestrained chick*” in order to resolve this *inter partes* review. *See Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) (“[C]laim terms need only be construed ‘to the extent necessary to resolve the controversy.’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

2. “*An unrestrained chick*”

The claim language “*an unrestrained chick*” was added by amendment during prosecution of the ’124 patent application claims. Ex. 1002, 184–185.¹¹ The Petition contends “*an unrestrained chick*” is a chick that can “freely move its wings while on the moving platform.” *Id.* at 18–19 (citing Ex. 1002, 196). Patent Owner contends Figure 3 in the ’124 patent illustrates “*an unrestrained chick*” that is “free to move as it naturally can while on the moving platform” such that “no part of the chick is being restricted from its natural movement—laterally, forward or backward, up or down, or rotationally.” Resp. 24–25 (citing Ex. 1001, Fig. 3; Ex. 2002 ¶¶ 119–121); Sur-Reply 12–13 (citing Ex. 1001, Fig. 3). In Reply, Petitioner cites the expert testimony of Mr. LeCroy to support the proffered construction in the Petition and offers an “alternative understanding,” based on the prosecution history of the ’124 patent, that an “*unrestrained chick*” is a chick that

¹¹ An “unrestrained” chick may be considered a negative limitation, i.e., a chick that is not restrained. *Ethicon LLC v. Intuitive Surgical, Inc.*, 847 Fed. App’x 901, 907 (Fed. Cir. Mar. 15, 2021) (“[S]uch exclusions must find support either in ‘the words of the claim’ or through an ‘express disclaimer or independent lexicography in the written description that would justify adding that negative limitation.’”).

is not “physically held in place.” Reply 5–6 (citing Ex. 1008 ¶ 44).

a. The '124 patent claim language and specification

Limitation [1.1] recites “*a moving platform to support an unrestrained chick.*” As stated above, the platform must be capable of moving and supporting a chick. The chick supported on the moving platform is “*unrestrained.*”

Claim 1 further recites “*at least one stimuli to cause the chick to open its wings,*” “*an image capture device to capture at least one image of the chick,*” and “*a computer processor*” where the captured image “*is processed and compared to the database [of male and female wing patterns] to determine the sex.*” In claim 1, the chick “*open[s] its wings*” when “*stimuli*” are applied and an image capture device captures an image of the chick. An image of the chick’s wings is used by the processor to compare the captured image to the database of male and female wing patterns to determine the chick’s sex. Thus, the structure of claim 1 suggests that “*an unrestrained chick*” is a chick free to open its wings on the moving platform, which permits image capture and a determination of a chick’s sex.

The '124 patent specification does not use the words “unrestrained,” “restrain,” or “restrained.” The specification does provide some context for “*an unrestrained chick*” as recited in claim 1. Figure 6 depicts a chick supported on a moving platform. Figure 6 is reproduced below:

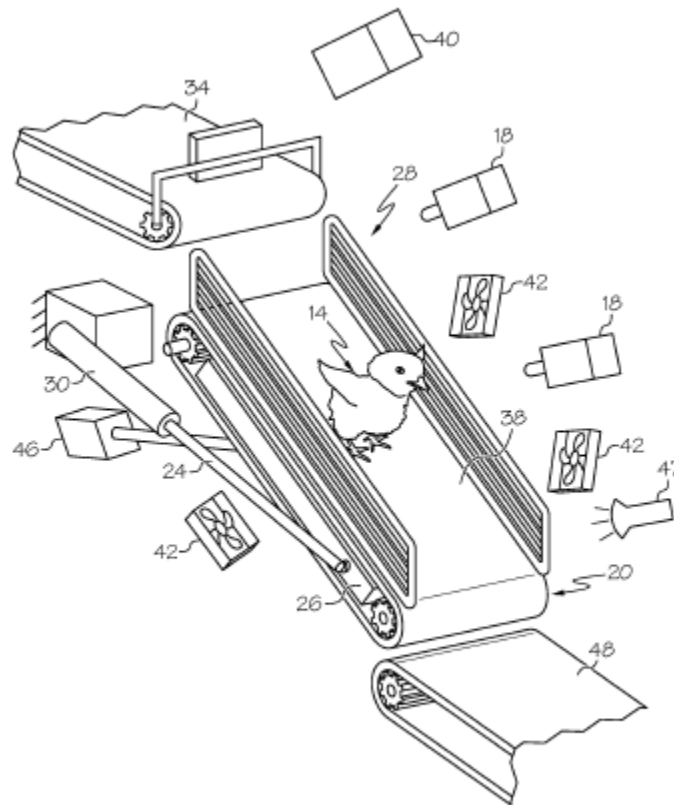


FIG. 6

Ex. 1001, Fig. 6.

Figure 6 illustrates a chick supported on a moving platform within a pair of parallel side rails and with its wings open. The chick is free to open its wings upon stimulation (vibrating angled conveyor 38, upwardly blowing air 42, strobe light 47), and cameras 18 capture an image of the chick, which is consistent with claim 1. *See* Ex. 1001, 6:18–20 (“[T]he chick begins to lift and flap its wings. As it does the cameras take images of the opened wing pattern.”). A comparison of the captured image to a database of male and female wing patterns is executed to determine the chick’s sex. *See Id.* at 2:57–60 (“capture at least one electronic image of the chick’s wings as they are spread”), 6:17–20 (“cameras take images of the opened wing pattern”), 6:22–25 (“computer processor . . . processes the images and compares them to images of male and female wing patterns within its

database”), Fig. 6. Thus, the embodiment depicted in Figure 6 is consistent with the language recited in claim 1 and supports reading “*an unrestrained chick*” as a chick free to open its wings on the moving platform.

The parties dispute a chick’s freedom of movement while supported on the moving platform. Patent Owner argues that Figure 3 of the ’124 patent depicts “*an unrestrained chick*” that is “free to move as it naturally can while on the moving platform” such that “no part of the chick is being restricted from its natural movement—laterally, forward or backward, up or down, or rotationally.” Resp. 24–25 (citing Ex. 1001, Fig. 3; Ex. 2002 ¶¶ 119–121); Sur-Reply 10–12 (citing Ex. 2008, 22:1–7, 22:23–23:12). Figure 3 is reproduced below:

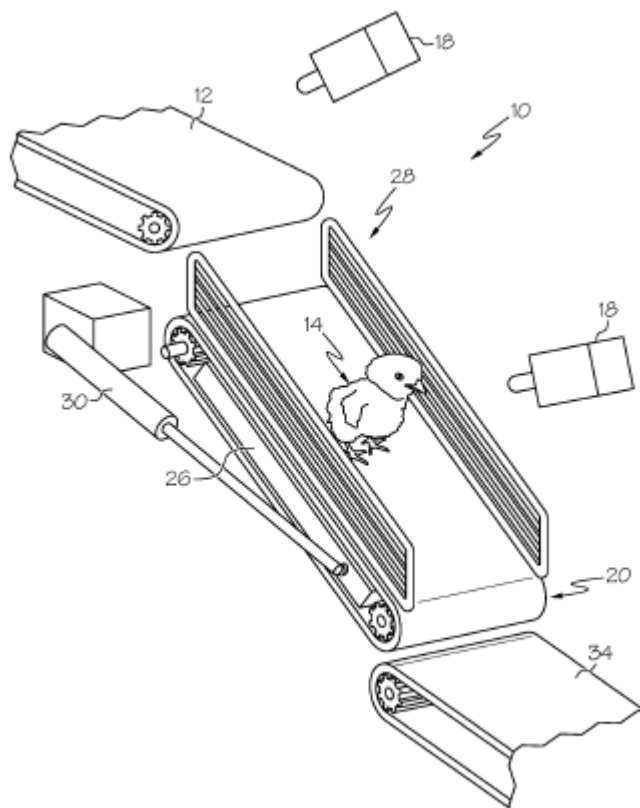


FIG. 3

Ex. 1001, Fig. 3. The chick supported on the moving platform in Figure 3 is depicted as free to move within a pair of parallel side rails. *Id.* The chick’s wings

are not open. The side rails “prevent the chick from falling off of the angled conveyor” by limiting or restricting the chick’s lateral movement on both sides of the moving platform. Ex. 1001, 4:20–21.

As Petitioner correctly observes, Patent Owner’s proposed construction of “*unrestrained*” would “exclude the ‘124 patent’s preferred embodiments (the angled conveyors of Figs. 3 and 6),” at least to the extent side rails restrict the chick’s lateral movement to prevent the chick from falling off the platform. Reply 5 (citing *Accent Packaging, Inc. v. Leggett & Platt, Inc.*, 707 F.3d 1318, 1326 (Fed. Cir. 2013) (“a claim interpretation that excludes a preferred embodiment from the scope of the claim is rarely, if ever, correct”) (citation omitted)). Patent Owner’s proposed construction is not commensurate with the claim language and would exclude the preferred embodiments on which Patent Owner relies for its proposed construction. Importantly, Patent Owner does not cite support for its construction in the ’124 patent specification apart from Figure 3. We also do not credit Dr. Keener’s testimony, on which Patent Owner relies, that “no part of the chick’s body is being restricted from its natural movement by the rails.” Ex. 2002 ¶ 120. The cited testimony is not consistent with the ’124 patent’s disclosure that a pair of parallel side rails prevent the chick from falling off the conveyor.¹²

Thus, the language of independent claims 1, 6, and 9 in view of the ’124 patent specification suggests “*an unrestrained chick*” is a chick free to open its wings on the moving platform.

¹² Figure 1 of the ’124 patent depicts a conveyor without side rails, but as Petitioner notes: “a side view in a patent drawing often prioritizes showing features of interest and routinely does not include other elements that would obscure or detract from these features.” Reply 15–16 (citing Ex. 1001, Fig. 1).

b. The prosecution history

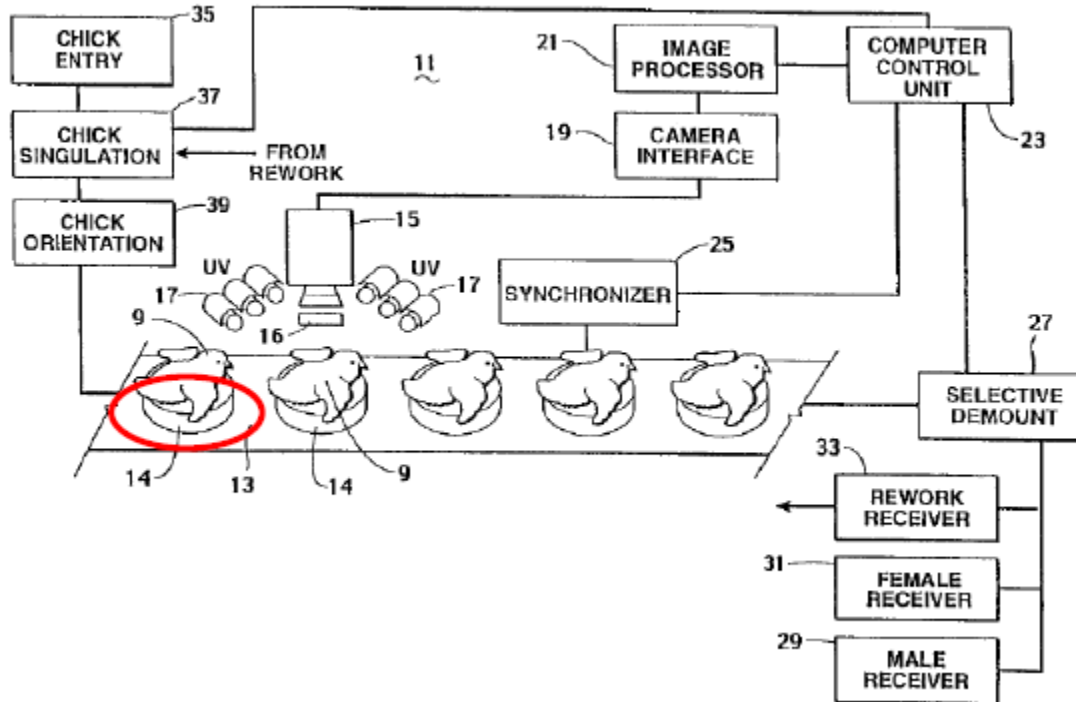
The claim recitation of an “*unrestrained*” chick was first introduced by amendment during prosecution of the ’124 patent. Applicant relied on that amendment to distinguish the prior art and persuade the Examiner to allow the amended claims to issue. Thus, the prosecution history of record for the ’124 patent provides further context for “*an unrestrained chick*” and “informs the meaning of the disputed claim phrase and addresses an ambiguity otherwise left unresolved by the claims and specification.” *Personalized Media Communications, LLC v. Apple Inc.*, 952 F.3d 1336, 1345 (Fed. Cir. 2020).

The first limitation in the body of claim 1 and corresponding limitations in application claims 9 (issued claim 6) and 21 (issued claim 9), originally recited “a moving platform to support a chick.”¹³ Ex. 1002, 505–506. The Examiner rejected the application claims, *inter alia*, over Tao (anticipation of certain claims), Tao in view of Yavnai, Tao in view of Yavnai and Gershman, and Tao in view of Gershman. Ex. 1002, 217–228. In response, Applicant amended the independent claims to recite “*a moving platform to support an unrestrained chick*” (application claims 1 and 21) and “*a moving platform upon which an unrestrained chick is supported*” (application claim 9), and argued to distinguish the amended claims over Tao and Yavnai. *Id.* at 184–185.

i. The Tao Reference (Ex. 1006)

Petitioner provides an annotated version of Tao Figure 1 depicting each chick on a “retainer unit” (14), which is reproduced below:

¹³ Application claim 9 recited “a moving platform upon which a chick is supported.”



Pet. 17–18. In annotated Figure 1, Tao discloses day-old chicks “individually transported on a conveyor 13 having appropriate chick retainers 14.” Ex. 1006, 3:64–66. Chick orientation unit 39 “positions the chicks on respective chick retainer units.” *Id.* at 6:19–21. Thus, in Tao, each chick is supported on the conveyor (“a moving platform”) but is held in place on a chick retainer unit to permit image capture of open wings by overhead camera 15 and feather sexing each chick. *Id.* at Abstract (“improved method for automatic chick sexing”), 3:62–66 (“chicks . . . are individually transported on a conveyor 13 having appropriate chick retainers 14”), 6:27–29 (“it is important in pattern recognition of chick sex to capture and allocate a clear and distinctive wing feather image”).

Applicant argued in response to the Examiner’s rejection over Tao as follows:

Tao et al. discloses a system for sexing a day old chick having a conveyor (13) and having a chick retainer (14) thereon. Chick

orientation unit 39 positions the chick (9) on the chick retainer unit (14) in order to take an image. Thus, the Tao system is only successful when the chick is *restrained on the chick retainer unit*. Because Tao et al. teaches that in order *to obtain a proper image of a chick's wing pattern, the chick must be restrained*, Tao et al. teaches away from claim 1 of the present invention. Because Tao et al. teaches away from amended claim 1 it does not render claim 1 obvious.

Ex. 1002, 195–196 (emphasis added). Applicant's argument distinguishing Tao refers to a chick being “restrained on the chick retainer unit ... to obtain a proper image of a chick's wing pattern.” *Id.* In Tao, each chick is positioned on a retainer unit with its wings open for image capture by the overhead camera, but each chick is held in place on a retainer unit. Thus, Applicant's argument, that Tao does not disclose “*an unrestrained chick*” because each chick is “restrained on the chick retainer unit,” further informs the claim language and specification of the '124 patent discussed above.

Mr. LeCroy also provides useful context for a POSITA's understanding of a “restrained chick” versus an “unrestrained chick”:

However, as one who has worked in the hatchery field for two decades, I would generally understand a restrained [] chick to be one that is physically held in place, such as by hand, so that it cannot run away. In other words, I would generally understand an unrestrained chick to be one that is not physically held in place.

Ex. 1008 ¶ 44. Mr. LeCroy further testified at his deposition on the same point:

Q. Would you agree that an unrestrained chick is one that is able to freely move its wings?

A. I would say that a restrained chick is one that is being held in place that is not allowed to move at all.

Q. So a restrained chick is one that can't move forward, backward, or have its wings move?

A. Yes, or -- a restrained chick would be one that is being basically held

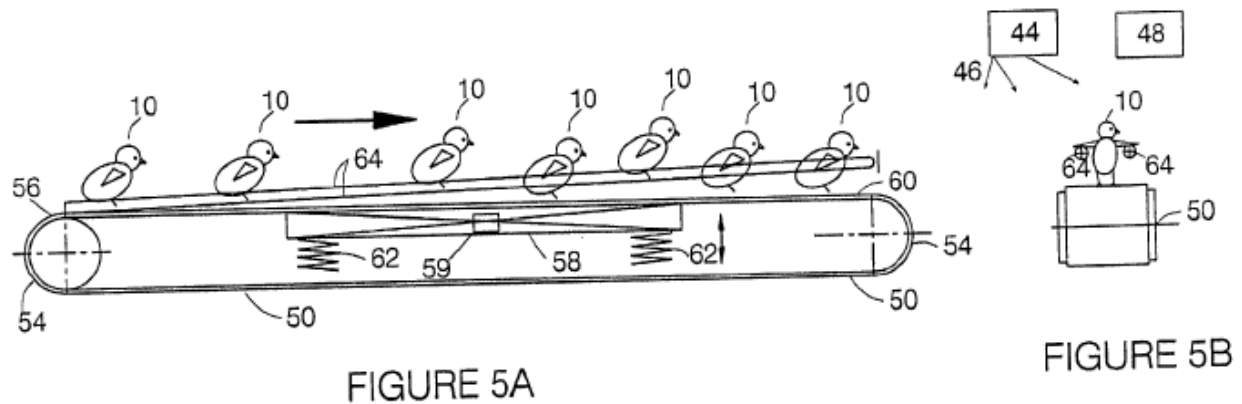
in place.

Ex. 2008, 23:21–24:5 (objection omitted). Mr. LeCroy’s testimony provides useful context for understanding the function of the chick retainer unit disclosed in Tao as a restraint that holds a chick in place on a moving platform. The testimony further informs a POSITA’s understanding of the ’124 patent, which describes prior art “[m]anual vent and feather sexing” that includes “manually causing the chick’s wings to spread” by physically holding a chick for a feather sexing examination. Ex. 1001, 2:6–20; *see also* Goodwin Ex. 1007, 2:24–26 (“sexing operator removes a chick from trough, determines the sex of the chick”).

Therefore, we find that Applicant distinguished Tao from “*an unrestrained chick*” because in Tao’s automated system a chick is restrained—the chick is held in place—by a retainer unit on a moving platform, whereas in Applicant’s claimed system a chick is not held in place on a moving platform. We further conclude that Applicant’s reason for distinguishing the claimed invention over Tao informs the claim construction even if the “prosecution history statements do not rise to the level of unmistakable disavowal” *Personalized Media*, 952 F.3d at 1345 (Fed. Cir. 2020). In view of the ’124 patent claims, specification, and prosecution history, we determine “*an unrestrained chick*” is a chick not held in place on the moving platform and free to open its wings.

ii. The Yavnai Reference (Ex. 1005)

Applicant also attempted to distinguish the combination of Tao and Yavnai. Ex. 1002, 194–196. Yavnai Figures 5A and 5B are reproduced below:



Ex. 1005, Fig. 5. The Yavnai system depicted in Figures 5A (side view) and 5B (front view) utilizes (i) a conveyor belt “whereon the chick stands” (see Fig. 5A at left), (ii) a vibrating mechanism that vibrates the conveyor belt and “cause[s] a chick to lose equilibrium and spread its wings,” and (iii) “two poles substantially parallel to the direction, for supporting the spread wings” (see Fig. 5B (64)). *Id.* ¶¶ 14, 25. Yavnai Figures 5A and 5B depict a chick at different points on the conveyor moving left to right as the conveyor “vibrate[s] up and down” such that the “chick loses its equilibrium, jumps up and spreads its wings.” *Id.* ¶ 42.

After the chick jumps up and spreads its wings, two parallel poles support the chick’s open wings, as shown on the far right side of Figure 5A and in the front view of Figure 5B. *Id.* At the camera station depicted in Figure 5B, two “[p]oles 64 support the spread wings while light 46 shines on the wing tips of chick 10 and camera 48 photographs the wings tips of chick 10.” *Id.* (emphasis added). Thus, in Yavnai’s system, a chick moves on a vibrating platform that causes disequilibrium so that the chick jumps up and spreads its wings over two substantially parallel support poles for image capture of the open wings. “The wings are caused to be spread so that chick sexing can be performed by [digitally] photographing the chick, applying appropriate image processing to the photograph,

identifying the sex of the chick from the processed photograph” *Id.* at Abstract.

Yavnai’s system, unlike Tao, does not hold a chick in place on the moving platform. Nonetheless, Applicant argued to the Examiner that Yavnai

teaches restraining a chick through the use of poles 64 or cups 40 to *restrain the chick in order to cause the chick to open its wings*. Amended claim 1 is directed to a system having a moving platform to support an unrestrained chick. A person of skill in this art would be discouraged from pursuing a system that allows a chick to be moved *unrestrained through the system* on the basis of the teachings of Tao et al. and Yavnai et al.

Ex. 1002, 196 (emphases added). We determine that Applicant’s argument is inconsistent with the recited claim language and also find that it is inconsistent with the teachings of Yavnai.

First, Applicant’s argument, that a POSITA would be discouraged from pursuing a system that allows a chick to move “unrestrained through the system,” is directed to a functional claim limitation not recited in the claims. The ’124 patent claims do not recite, and the specification does not describe, movement of a chick “unrestrained through the system” as argued by Applicant and Patent Owner. *See* Resp. 44–45 (“The claims require that the chick be unrestrained throughout the recited process;” “the chick is unrestrained throughout the stimulation and imaging process”). The argument also does not explain clearly how the recited system component—“*a moving platform to support an unrestrained chick*”—distinguishes over Yavnai. Unlike Tao, the chick in Yavnai is not restrained, i.e., not held in place on the conveyor. It appears the Examiner overlooked the lack of support in the claims and specification for Applicant’s (and Patent Owner’s) “unrestrained through the system” argument. Applicant also argued that a POSITA would not combine features of Yavnai with Tao to arrive at the claimed invention, rather than

clearly distinguishing over Yavnai, where Tao teaches a restrained chick held in place on a moving platform.

Thus, the Examiner’s statement that the amended claims were “allowable for the reasons stated in Applicant remarks” does not withstand close scrutiny to the extent it includes Applicant’s remarks regarding Yavnai quoted above. *See* Ex. 1002, 129.

Second, Applicant’s characterization of Yavnai’s poles (and cups) as a restraint that “causes” a chick to open its wings, rather than as a support for open wings, is not persuasive. Yavnai’s system uses the vibrating conveyor to cause a chick to lose its equilibrium, jump up, and open its wings; not the support poles. Once the chick’s wings are open, the poles “support” the open wings for image capture as shown in Figure 5B. Ex. 1005 ¶¶ 14 (“two poles substantially parallel to the direction, for supporting the spread wings”), 42 (“[p]oles 64 support the spread wings”). The Examiner did not address Applicant’s interpretation of Yavnai’s support poles as a restraint that causes a chick to open its wings, beyond a general statement that Tao, Yavnai, and/or Gershman “do not disclose, teach or suggest, a moving platform to support an unrestrained chick of a particular breed.” Ex. 1002, 129–130.

Third, Yavnai does not disclose, teach, or suggest restraining a chick by holding it in place on the moving platform. Patent Owner does not argue otherwise. *See* Resp. 45–48 (citing Ex. 1005, Abstract (“two poles [] support[] the spread wings”), ¶ 42 (“Poles 64 support the spread wings ...”); Ex. 2002 ¶¶ 154–159). Dr. Keener, for example, opines that Yavnai’s support poles “restrain” a chick’s lateral movement “from the start to the end” of the platform, and the support poles “support the wings in an open state and prevent/restrict the chick from closing its wings to their closed position absent the poles.” Ex. 2002 ¶¶ 155–

157. To the extent Patent Owner now argues that Yavnai’s two support poles “restrain” a chick’s lateral movement, that argument was not made during prosecution. Moreover, such lateral restriction argued by Patent Owner is not meaningfully distinguishable from that imparted by the parallel side rails depicted in Figures 3 and 6 of the ’124 patent. *Compare* Ex. 1001, 4:20–21 (“The frame supports a pair of rails that prevent the chick from falling off of the angled conveyor.”) *with* Resp. 46 (“the narrow and constricting poles of Yavnai must be configured to restrain the chick from lateral movement for the duration the chicks are on the moving platform, or they would potentially fall off” (citing Ex. 2002 ¶¶ 155–156)); Sur-Reply 14 (in Yavnai, “the narrow side poles next to [a chick’s] legs will restrain it by preventing it from moving laterally and falling off” (citing Ex. 2002 ¶ 99)).

Similarly, characterizing the chick in Yavnai as “restrained,” even though the chick is free to jump up from the conveyor and open its wings, which are supported by two parallel “support” poles for image capture, is inconsistent with the ’124 patent claim language, specification, and prosecution history argument distinguishing Tao. In Tao, “*the chick* is restrained on the chick retainer unit.” Ex. 1002, 196 (emphasis added). Contrary to Patent Owner’s argument, the fact that support poles underneath a chick’s wings keep the *wings* open and restrict or prevent the *wings* from closing during image capture, does not mean *the chick* is restrained on the moving platform. *See* Sur-Reply 11–12 (“However, now with the benefit of expert testimony from both side’s experts it is clear that the poles do not only support *the chick*, but they also **prevent** *the wings* from closing.”) (unbolded italics added) (citing Ex. 1005, Fig. 5B; Ex. 2002 ¶ 99; Ex. 2008, 22:1–7, 22:23–23:8). As Mr. LeCroy testified:

Q. And the poles keep the chick’s wings open, right?

A. It appears that they're supporting the wings.

Q. And the way they support it is they keep the chick's wings open, right?

A. Correct. . . .

Q. Because the system isn't going to work unless the chick's wings are open, right?

A. The system needs the chick's wings to be open, correct. And the bars are there to support the chicks, chick's wings, correct.

Ex. 2008, 22:1–7, 23:3–8. We agree with Mr. LeCroy and find his testimony credible and consistent with the disclosures in Yavnai.

3. Construction of “an unrestrained chick”

For the reasons given above, we construe the claim element “*an unrestrained chick*” to mean a chick not held in place on the moving platform and free to open its wings.

We determine that no further construction of claim terms is necessary to decide this *inter partes* review. *See, e.g., Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) (“[C]laim terms need only be construed ‘to the extent necessary to resolve the controversy.’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

III. GERSHMAN AND PIERRE - GROUNDS 1, 4, 6, AND 7

Petitioner argues that Gershman in view of Pierre (Ground 1), and Gershman in view of Pierre and Tao (Ground 7) render claims 1–5 and 9–15 unpatentable as obvious under 35 U.S.C. § 103. Pet. 9–11, 13–14, 21–25, 43–54. Petitioner further argues that Pierre in view of Gershman (Ground 4) and Pierre in view of Gershman and Tao (Ground 6) render claims 1 and 6–8 unpatentable as obvious under 35 U.S.C. § 103. *Id.* at 35–43. The Petition relies on express disclosures in

Gershman, Pierre, and Tao and argument of counsel in support of its obviousness arguments. The Petition does not rely on or cite to expert testimony.¹⁴

In all four Grounds, the Petition relies on Gershman as disclosing limitation [1.1]—“*a moving platform to support an unrestrained chick*”—and the corresponding limitations in independent claims 6 (Ground 4, limitation [6.1]) and 9 (Ground 7, limitation [9.1]). Pet. 21–22 (Ground 1), 36–37 (Ground 4), 46–47 (Ground 7).¹⁵ Patent Owner argues that Gershman does not disclose limitation [1.1] and the corresponding limitations in claims 6 and 9. Resp. 27–37 (citing Ex. 2002 ¶¶ 123–142). Patent Owner also challenges the Petition’s argument and evidence supporting a motivation to combine Gershman and Pierre with a reasonable expectation of success. *Id.* at 6–9 (citing Ex. 2002 ¶¶ 56–62). Patent Owner further contends that the Gershman-Pierre and Pierre-Gershman combinations fail to disclose all of the recited claim limitations as construed by Patent Owner. *Id.* at 2–4 (citing Ex. 2002 ¶¶ 39–50), 37–42 (citing Ex. 2002 ¶¶ 143–148; Ex. 2003 ¶¶ 38–52).

A patent claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person of ordinary skill in the art. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (quoting pre-AIA 35 U.S.C. § 103(a)). We assess Petitioner’s evidence and argument according to the above-referenced obviousness standard. We also address the parties’ arguments in view of our construction of

¹⁴ Petitioner’s Reply cites to expert declaration testimony of Mr. LeCroy (Ex. 1008). We address Patent Owner’s Motion to Strike Mr. LeCroy’s declaration in Section V of this decision. *See* Paper 22.

¹⁵ Ground 6 is directed only to dependent claim 8, which depends from claim 6.

“*an unrestrained chick*” in limitation [1.1]. For the reasons given below, we determine Petitioner has established that claims 1–2, and 4–14 are unpatentable as obvious over Gershman, Pierre, and Tao (Grounds 1, 4, 6, and 7) by a preponderance of the evidence. We further determine Petitioner has not established that claims 3 and 15 are unpatentable as obvious over Gershman, Pierre, and Tao by a preponderance of the evidence.

We begin with a discussion of the Gershman reference.

A. Gershman (Ex. 1003)

Gershman discloses a computerized digital imaging and processing system for photographing the open wings of a chick to determine the chick’s sex. Ex. 1003. Gershman’s system utilizes a “moving plate” on which a chick is placed, and a sharp downward movement of the plate causes the chick to open its wings “reflexively” for digital image capture. *Id.* at 3–7, Figs. 3, 5, 6. Gershman Figure 3 shows a chick on a moving plate and is reproduced below:



Fig.3 Chick on plate. Light radiates from the bottom

Id. at 5. In Figure 3, above, the chick is “placed on plate manually” and the plate “pushed down from a height of 20 cm [8”] on the shock absorbers (Fig. 3).” *Id.*

Gershman employs a “mechanical activator” to “ensure sharp fall of [the] plate” such that chicks “reflexively will open their wings.” *Id.* at 5–6. A digital image of a chick with open wings is depicted in Gershman Figure 5 below:

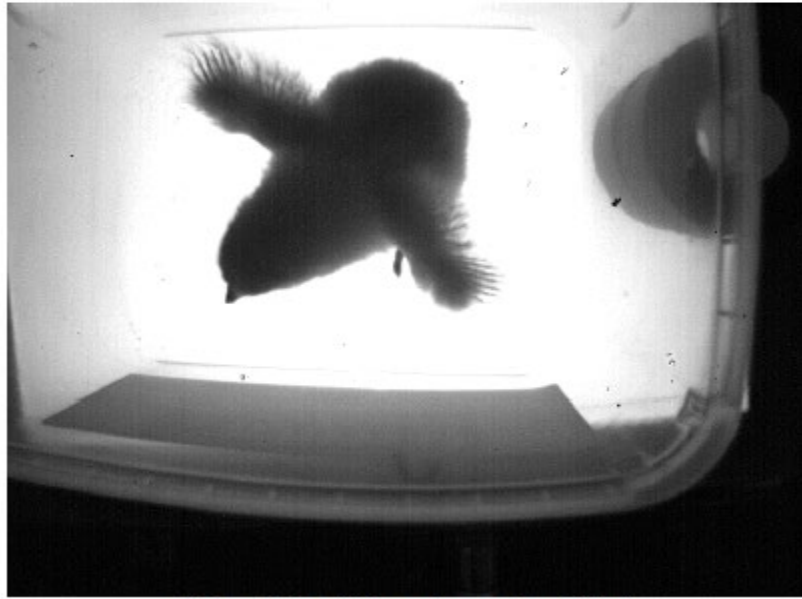


Fig. 5. Falling female chick

Id. at 7. Figure 5, above, is an overhead digital image of a falling female chick with open wings. The “milk-white plastic PVC” moving plate is underneath the chick and difficult to discern, apart from some darker edges, due to white backlighting from an “led white light source” at 2500 lumens that radiates from the bottom up through the moving plate to silhouette the chick. *Id.* at 5; Resp. 33 (citing Ex. 1003, 3, 5; Ex. 2002 ¶ 135). Gershman uses image processing for “automatic sorting” of the chicks by sex. *Id.* at 4, 10.

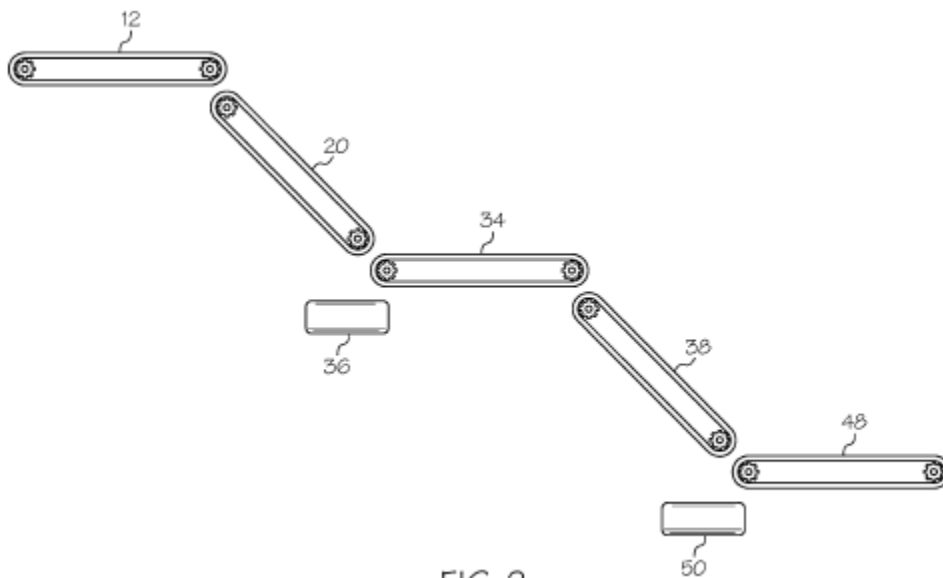
B. Gershman Discloses Limitation [1.1]

1. Limitation [1.1]: “a moving platform to support an unrestrained chick of a particular breed;”

The parties agree that limitation [1.1] requires a chick to be supported on a moving platform. Pet. 16 (“moving platform” is “a platform that transports a chick

from a first location to a second location”); Resp. 21 (“a platform in motion supporting an unrestrained chick as it transports the chick from a first location to a second location”); Reply 3 (“[Patent Owner’s] proposed interpretation of two phrases related to the “moving platform” is consistent with Petitioner’s application of the claims.”). Importantly, the parties further agree that limitation [1.1] does not require a chick to remain on the moving platform at all times during transport. As Patent Owner’s Counsel acknowledged during the Oral Hearing, a chick may jump up off the platform during transport and still be supported “so long as the chick is going to return to the platform.” Paper 36 (“Tr.”), 77:3–10; *see also id.* at 63:10–11 (Petitioner’s Counsel: “even if the chick is momentarily off the plate for a little bit because it jumped up, [] the platform is still there to support it”).

For example, the ’124 patent describes a system where a series of alternating conveyors cause a chick to be “dropped onto” a horizontal conveyor (36, 50) positioned below a downwardly angled conveyor (20, 38), as depicted in Figure 2 reproduced below:



Ex. 1001, 5:50–56, Fig. 2. In Figure 2, an actuator arm moves conveyor 20 from a

horizontal to a downwardly angled position and the conveyor pivots laterally, such that at “a certain angle θ ” a chick “cannot remain on the [] angled conveyor and is *dropped onto* the fourth conveyor 36.” *Id.* (emphasis added); *see also id.* 6:33–35 (“chick 14 . . . is *dropped onto* an alternate conveyor 50 for further processing”) (emphasis added). The chick is not in contact with the moving platform during the time it is dropped from one conveyor to another, but the chick is still supported on a moving platform. *See* Tr. 42 (Patent Owner’s Counsel: “the chick is still supported by the conveyor, even if it’s vibrating the chick up and down”).

The parties’ dispute centers on whether Gershman discloses and teaches a chick that is supported on “*a moving platform.*” Patent Owner does not dispute that the chick in Gershman’s moving plate system is “*an unrestrained chick of a particular breed.*” Resp. 27–39. The Petition asserts that Gershman’s moving plate satisfies limitation [1.1]. Pet. 9–10, 21–22. Patent Owner insists it does not because Gershman’s “moving plate” is “never moving **and** supporting a chick.” Resp. 2. Petitioner counters that Gershman’s “chick will be supported at least some of the time the plate is moving.” Reply 2. Patent Owner frames the issue as follows: “[T]he only question is whether Gershman discloses a platform that is both ‘moving’ and ‘support[ing]’ the chick simultaneously.” Sur-Reply 4.

For the reasons given below, we find the Petition has established that Gershman discloses and teaches “*a moving platform to support an unrestrained chick of a particular breed*” by a preponderance of the evidence.

2. *Gershman’s “moving plate” is “a moving platform to support an unrestrained chick”*

The Petition emphasizes the Gershman system “includes a moving plate on which a chick is placed,” as depicted in Gershman Figure 3 reproduced below:



Fig.3 Chick on plate. Light radiates from the bottom

Pet. 9 (citing Ex. 1003, 3 (1 stage), Fig. 3), 22 (“Gershman discloses a moving plate with a surface upon which a chick is placed.”). In Figure 3, above, Gershman literally depicts a chick supported on a moving plate: “2. Chicken are placed on a *moving plate* and [] photographed during the fall.” Ex. 1003, 3 (emphasis added); *see also id.* at 5 (“Chickens were placed on plate manually”).

Gershman expressly discloses and depicts a chick supported on a “*a moving platform*,” which is sufficient to satisfy the contested element in limitation [1.1]. As shown in Figure 3, the chick is placed on a moving plate and supported in an unrestrained manner as the moving plate and chick are placed in position to be moved sharply downward, thereby inducing the chick to open its wings for image capture as shown in the overhead digital photograph of Figure 5. Nothing more is required by limitation [1.1]. Thus, Gershman discloses and teaches “*a moving platform to support an unrestrained chick*” as recited in limitation [1.1]. Pet. 9–10, 22; *see also* Tr. 20:22–25 (“But Gershman has the statement when we’re talking about the moving platform to support an unrestrained chick, chickens are placed on a moving plate. That’s right on point, with this statement. And we really think that’s just about as far as the Board needs to go”).

The chick and the moving plate are “pushed down from a height of 20 cm [8”] on the shock absorbers (Fig. 3)” to ensure the chick opens its wings during the fall. Ex. 1003, 5, Figs. 3, 5; Pet. 10, 22. Such disclosure additionally satisfies limitation [1.1] because the moving plate transports the chick from one location to another and provides support during at least part of the time the chick is moving. A chick starts by being placed on a moving plate (Figure 3). Once in position, the chick on the moving plate is subjected to a sharp downward movement that generates an “initial acceleration, a little more than *g* [gravitational acceleration],” which causes “th[e] feet of chicks [to] be without support and they reflexively will open their wings” for image capture before returning to the moving plate. *Id.* at 3, 5–6, Figs. 3, 5, 6.

As Patent Owner’s Counsel acknowledged during the Oral Hearing, and as we discussed above, a chick may jump up from a platform but still be supported and satisfy limitation [1.1] “so long as the chick is going to return to the platform.” Tr. 77:3–10; *see also id.* at 35: 2–10 (“Well, when they jump up, just like someone jumping up on a floor, you’re still supported by the floor, we would contend. . . . Their feet are not maybe touching the platform, but they’re still supported by the platform.”); 43:8–9 (“Because even if the feet are not in contact with the conveyor briefly, it is still supported by the conveyor.”). When pressed on why Gershman would be distinguishable from the embodiment in the ’124 patent where an unbalanced chick “begins to *lift* and flap its wings” (Ex. 1001, 6:16–20 (emphasis added)), counsel acknowledged that in Gershman:

At some point the platform is going to hit the shock absorbers, and then the plate -- then the chick will land on the plate.

Tr. 43:18–19. Petitioner’s Counsel also emphasized: “[E]ven if the chick is momentarily off the plate for a little bit because it jumped up, the floor, the

platform is still there to support it. And our position would be, well, if that's true, then similarly, that's equally true in Gershman.” *Id.* at 63:10–13. We agree.

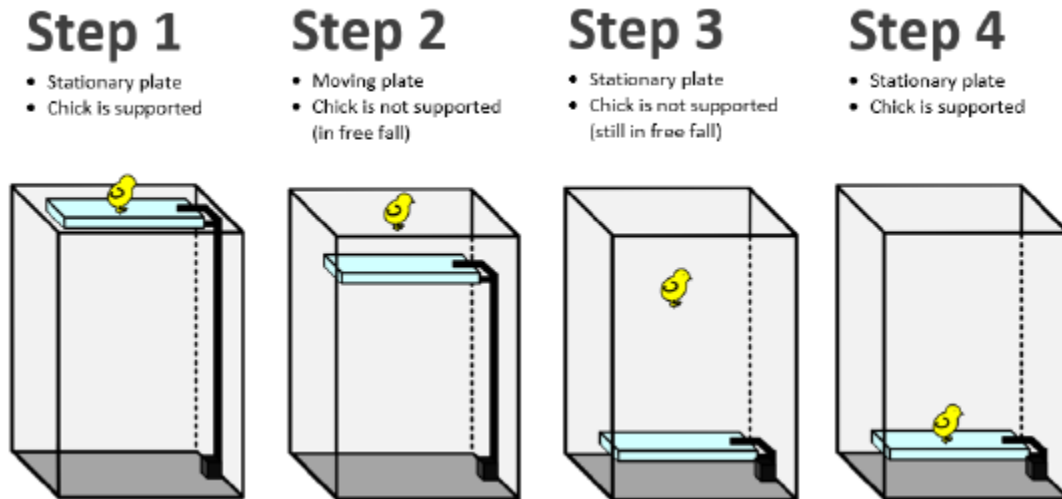
The Petition contends limitation [1.1] is also satisfied because the moving plate “transports a chick from a first location to a second location via a mechanical activator,” the “movement and position of the chick are not restrained on the moving plate,” and the movement of the plate causes chicks to “‘reflexively . . . open their wings’ as a result of the movement of the plate.” Pet. 10, 22 (citing Ex. 1003, 2, 5, 6, Fig. 5). The Petition relies on Gershman Figure 5, discussed above, as a depiction of “*an unrestrained chick*” that reflexively opens its wings during the fall. *Id.* at 10 (citing Ex. 1003, Fig. 5). The Petition notes that the chick in Gershman “is not restrained other than being supported by the moving platform.” *Id.* The Petition further contends that Gershman teaches “the chick being a particular breed having a genetic factor resulting in sex-based differences in feather patterns” in satisfaction of the “*particular breed*” element of limitation [1.1]. Pet. 20 (citing Ex. 1003, 1 (Introduction)). Patent Owner does not contest the Petition’s assertion that Gershman discloses the element in limitation [1.1] reciting “*an unrestrained chick of a particular breed.*” Resp. 27–42; Sur-Reply 3–9.

3. Addressing Patent Owner’s Arguments

First, Patent Owner asserts that a chick is supported on Gershman’s moving plate “only when the plate is entirely stationary.” Resp. 28 (citing Ex. 1003, 2–3; Ex. 2002 ¶ 125); *see also id.* at 27, 33–34 (citing Ex. 1003, 3, 5, 10, Figs. 5, 6; Ex. 2002 ¶¶ 124–125, 137). Patent Owner’s assertion is based on the faulty proposition that “[e]nsuring chicks are supported on a moving platform *through the sexing and evaluation* allows for a fast, efficient, and controlled *process.*” *Id.* at 29 (emphasis added). The claims in the ’124 patent are not process claims and do not recite “supporting” a chick on a moving platform “through the sexing and

evaluation” of a chick’s sex or health. The claims all recite discrete components and functions to determine the sex, health, or other predetermined feature of a chick.

Patent Owner relies on four demonstrative diagrams in support of its argument. *Id.* at 28 (citing Ex. 2002 ¶ 125). The diagrams are reproduced below:



Id. The four diagrams above represent four points in time, in what Patent Owner asserts to be representative of Gershman’s moving plate system with a chick supported on an “entirely stationary” plate at point 1 and point 4. *Id.* But there is little probative value in the demonstrative diagrams because they are based on a misreading of Gershman. Gershman discloses a chick “placed on a moving plate” not on a stationary plate. Ex. 1003, 3. Gershman, moreover, does not disclose, teach, or suggest the counterintuitive proposition that, when the chick is placed on a moving plate, the moving plate is “entirely stationary” whenever the chick is on it.

For example, the four diagrams do not depict, and Dr. Keener does not address, a chick being placed (supported) on a moving plate positioned for being pushed down as disclosed and depicted in Gershman Figure 3. The demonstrative images do not depict, and Dr. Keener does not address, whether the chick is in

contact with and supported by the moving plate during transition periods such as when (i) a chick transitions from the presumed “entirely stationary” position to achieving “initial acceleration, a little more than g ” via mechanical actuator, or (ii) the falling chick contacts the moving plate after initial acceleration. Petitioner’s expert, Mr. LeCroy, does address those transition periods as discussed below.

Third, Gershman’s disclosed system moves (pushes) the moving plate downward from a height of 20 centimeters at an acceleration that is “only a little more than free-fall,” e.g., 12–15 m/s^2 . Ex. 1003, 3, 5. Because of the sharp downward motion of the moving plate, the “feet of chicks will be without support and they reflexively will open their wings” for image capture. *Id.* at 5–6. But as Petitioner points out,

Gershman specifically proposes control measures to ensure that the image is acquired at “the moment of maximum disclosure of [the] wings,” e.g., when the moving platform accelerates. EX 1003, 5. A POSITA would understand that Gershman is concerned with the ***moment*** of image acquisition because Gershman only provides a short window during which the chick’s wings are exposed. Consequently, one would expect that the chick only falls for a short duration before it is once again supported by the moving platform.

Reply 9 (citing Ex. 1008 ¶¶ 24–25). We are persuaded by Petitioner’s argument and the rebuttal testimony of Mr. LeCroy based on the disclosures in Gershman.

Mr. LeCroy testifies in rebuttal to Dr. Keener’s declaration testimony as follows:

First, unlike the diagrams above [from Dr. Keener], each chick in Gershman’s system *would never be very far removed from the plate*. As I noted above, a one-day old chick is only about 3 to 4 inches tall. Gershman explains that “Chickens were placed on plate manually and was [sic] pushed down from a height of 20 cm on the shock absorbers (Fig. 3).” A 20 cm drop is only about 8 inches. In other words, the total drop of the plate in Gershman’s example was approximately twice the height of a standing chick. For this reason alone, the diagrams showing

Steps 1-4 of Gershman above are not accurate because *they show a chick dropping many times the chick's height and being many times its height above the plate.*

Ex. 1008 ¶ 24 (citing Ex. 1003, 5) (emphasis added). We agree with Mr. LeCroy that Patent Owner and Dr. Keener's representations of Gershman do not accurately depict the relative height of the plate drop to the height of a chick. The demonstrative images makes the space between the dropping chick and plate appear to be much greater than what is disclosed and taught in Gershman.

Fourth, Mr. LeCroy further testifies in rebuttal to Dr. Keener as to what Gershman discloses and would have taught a POSITA:

Gershman states:

As we observed in our fast filming, reaction of chicken libs irritation occurs very quickly, approximately 30-40 msec. If we assume that, the claws can pubescent 10 mm and this movement is uniformly accelerated, can be calculated that, acceleration of plate must be equal 12-15 m/sec². ***It is only a little more than free-fall acceleration*** and easily imitated by sharp lowering his human hands.

To ensure sharp fall of plate it is possible to use mechanical activator (for example, a cylinder with a flexible wheel at the end of the pusher), which will provide the ***initial acceleration, a little more than g.***

From the above quotes and my review of Gershman I understand Gershman to be explaining that the initial acceleration of the plate is slightly more than gravity or free fall acceleration. This confirms my understanding that *in Gershman's system the chick should never be very far above the plate.*

Finally, any person working in the field of automated chick transport and processing would naturally want to minimize the amount the chick dropped even though an eight inch drop would not hurt the chick. For the same reason, it makes sense that *Gershman wanted to cushion the bottom of the plate's movement with shock absorbers and/or springs.*

Id. ¶¶ 25–26 (citing Ex. 1003, 3, 5) (emphases added). Mr. LeCroy continues, after noting Gershman’s disclosure of a chick “placed on a moving plate”:

I disagree that the plate in Gershman is “never moving and supporting a chick” and that the “chick is in free fall any time the plate is moving” for several reasons. I also believe a person in the hatchery automation art in 2015 would have shared my understanding. . . . Gershman also proposed that his system could be incorporated into lines in use for counting and packaging hatching chicks by including “moving plates with corresponding springs.” The *shock absorbers and the moving plates with corresponding plates* [springs] *indicate that the chick would be cushioned by the moving plate as it decelerates towards the end of the plate’s decent.* More generally, in order to minimize stress to the chick, a person of [skill] in the art of hatchery automation would want to cushion the chick’s landing with the moving plate. For all of these reasons, regardless of whether or not the chick briefly separates from the plate in Gershman’s system, *I would have expected the chick to be supported by Gershman’s moving plate at least part of the time the plate was moving.*

Id. ¶ 28 (citing Ex. 1003, 3–5) (emphases added). We are persuaded by Mr. LeCroy’s rebuttal testimony, which is consistent with the cited disclosures and figures in Gershman.

Minimizing the gap between initial acceleration of the moving plate and gravitational acceleration of the chick ensures a minimal gap between the dropping plate and chick. Moreover, Mr. LeCroy’s common sense assertion, based on his experience working in chick hatcheries, that a POSITA using Gershman’s system would understand the need to minimize the drop and cushion the chick to protect against injury, rings true in the context of Gershman’s teaching an application of the moving plate system in a chick hatchery processing line. Ex. 1003, 4, 10 (“It is obvious, that this idea can simply [be] adapted on to the lines that are wide used for counting and packaging hatching chicks in industrial incubators.”); *see also* Ex. 1008 ¶¶ 6 (“During this 17 year period I worked regularly in hatcheries, often on a

weekly basis.”), 8 (“In the event of chick mortality incidents, I was also responsible for investigating the possible cause of the mortality and to recommend best practices to prevent future mortality issues.”). Patent Owner’s argument, that Gershman’s moving plate “is either stationary and supporting the chick or accelerating downward and not supporting the chick—but never both moving and supporting the chick,” is not consistent with Gershman or Mr. LeCroy’s declaration and deposition testimony explaining how Gershman’s system would have been understood by a POSITA. We credit Mr. LeCroy’s testimony based on his experience in chick hatcheries and the evidentiary record in this proceeding.

At the oral hearing, Counsel for Patent Owner argued that “In Gershman, it’s undisputed that when the chick is placed on the plate, the plate is stationary. It is not moving.” Tr. 38:8–16. When asked: “where does Gershman say that?,” Counsel for Patent Owner responded:

Well, so Gershman shows a chick on a stationary plate. And that’s at the point with the where the chick is placed on the plate.

Id. We are not persuaded by this argument for the reasons given above. Patent Owner also reads too much into Mr. LeCroy’s deposition testimony where he agreed with the question: “Q. And *at that point*, when the chick is placed on the plate, the plate is stationary, right? A. Correct.” *See* Sur-Reply 4 (citing Ex. 2008, 32:25–33:6 (emphasis added)). The deposition testimony corresponds to a single point in time, as discussed above, which is not determinative.

Mr. LeCroy also explained during his deposition that Gershman (i) discloses that only the “initial acceleration” is more than gravitational acceleration, (ii) that a POSITA would understand the initial acceleration would be followed by a period of deceleration, and (iii) the obvious purpose of shock absorbers and springs is to decelerate the moving plate and cushion the chick’s fall back onto the moving

plate:

Q. Right. Does it ever state that after that initial acceleration the plate is going to be moving at gravity or less than gravitational acceleration?

A. It does not, but it also doesn't say it's going to maintain that initial acceleration. If you say "initial acceleration," it's meant to be that that's what is going to happen at the start. But there's always an acceleration and deceleration phase of any kind of moving equipment. So it's kind of understood that if you're going to start and stop something, that you're going to have to decelerate it.

Ex. 2008, 35:12–23. Mr. LeCroy continued:

Q. Gershman doesn't state anywhere, right, that the purpose of the shock absorbers is to decelerate the chick, right?

A. No, but that's -- that's -- that's the intent of that, obviously, is to -- is to help absorb that plate and chick, the stop of those -- of those two things. That's the purpose of a shock absorber.

Ex. 2008, 36:8–37:3. We agree with Mr. LeCroy and find that a POSITA would have understood Gershman's system to generate an initial acceleration slightly greater than gravitational acceleration, by moving the plate downward at about 12-15 m/s². Ex. 1003, 3. Based on Mr. LeCroy's testimony cited above, a POSITA also would have understood the period of initial acceleration would be followed by a period of deceleration, assisted by the shock absorbers and/or springs taught by Gershman, such that the chick would be supported on the moving plate at least part of the time it was moving downward with the moving plate.¹⁶

Thus, Patent Owner's contention that Gershman fails to disclose limitation

¹⁶ In addition, as indicated above, Gershman shows that a holder of the plate is capable of initially moving the plate more slowly with the chick supported on the plate. *See In re Schreiber*, 128 F.3d 1473 (Fed. Cir. 1997) ("Although Schreiber is correct that *Harz does not address the use of the disclosed structure to dispense popcorn*, the absence of a disclosure relating to function does not defeat the Board's finding of anticipation.").

[1.1] is unavailing. We are persuaded by Mr. LeCroy’s reasoning, experience in chick hatcheries, and his explanation of the teachings in Gershman.¹⁷

4. Conclusion

For the reasons given above, we determine Petitioner has established by a preponderance of the evidence that Gershman discloses limitation [1.1] and the corresponding limitation in independent claims 6 and 9.

C. Gershman-Pierre Discloses Limitations [1.4] and [1.5]; Not Claim 3

In Ground 1, the Petition relies on Gershman for disclosure of the preamble, “*stimuli*,” and “*image capture device*” limitations [1.0], [1.2], and [1.3]. Pet. 21–23 (citing Ex. 1003, (Abstract), 1, 3, 5–6). Patent Owner does not contest the Petition’s evidence and argument that Gershman discloses limitations [1.0], [1.2] and [1.3], or the corresponding limitations in independent claims 6 (Ground 4) and 9 (Ground 7). Resp. 27–42 (citing Ex. 2002 ¶ 148; Ex. 2003 ¶¶ 38–60). Having reviewed the Petition’s evidence and argument, we determine that Petitioner has established by a preponderance of the evidence that Gershman discloses limitations [1.0], [1.2], and [1.3] and the corresponding limitations in independent claims 6 and 9 for the reasons stated in the Petition.

The Petition relies on the combination of Gershman and Pierre for the disclosure of limitations [1.4] “*a computer processor having a database of images of male and female wing patterns*” and [1.5] “*at least one image of the chick . . . is processed and compared to the database to determine the sex,*” and their

¹⁷ For the same reasons, we also reject Patent Owner’s contention that Gershman’s moving plate does not transport a chick from a first location to a second location, but rather gravity “transports the chick from a first location to a second location.” Resp. 30. As stated previously, the ’124 patent describes an embodiment where a chick is dropped onto a lower conveyor but is still supported by the moving platform. Ex. 1001, 5:50–56, 6:33–35 Fig. 2.

corresponding limitations in independent claims 6 and 9. Pet. 21–24, 35–41, 46–51. The Petition further relies on Gershman’s teaching of blowing compressed air on a chick as a disclosure of claim 3 (“*wherein the stimuli may be one or more of the following group: . . . a stream of air blowing on the chick*”) (Ground 1). Pet. 25. Patent Owner contests the Petition’s evidence and argument that Gershman-Pierre discloses limitations [1.4] and [1.5] and the corresponding limitations in claims 6 and 9. Resp. 4, 39–42. Patent Owner also contests the Petition’s evidence and argument that Gershman discloses the additional stimuli limitation recited in dependent claim 3. *Id.* at 37–39.

We begin with a discussion of the Pierre reference.

1. Pierre (Ex. 1004)

Pierre is directed to automated, image-based determinations of a chick’s health and gender in industrial poultry breeding facilities. Ex. 1004, 3–4.¹⁸ Pierre explains that a necessary step is “promoting the opening of the bird’s wings” to obtain a digital image of the chick’s feathers for examination. *Id.* at 3. Pierre discloses a system that places “each bird, one at a time, under conditions in which it will open its wings, across from a digital imaging camera . . . while falling,” and photographs the bird’s open wings. *Id.* at 4–5. “Then a computerized processing process is implemented in order to compare the captured images to reference images recording a specific state for each animal examined, to deduce from this a characteristic to attribute to it,” such as “the state of the bird’s health, the sex of chicks, or their age.” *Id.* at 3–4. Pierre also discloses a comparison of “an image of opened wings captured by said camera . . . with a reference image,” a point of

¹⁸ Cited page numbers are the exhibit control numbers at the bottom of each page.

dispute between the parties. *Id.* at 4; *see also id.* at 5 (“the image captured for image processing may be optimal for comparison with a reference image”).

2. *Gershman-Pierre Discloses Limitations [1.4] and [1.5]*

Limitations [1.4]: “*a computer processor having a database of images of male and female wing patterns for the particular breed, the computer processor in communication with the image capture device, [1.5] whereby the image capture device captures at least one image of the chick and transmits it to the computer processor where the image is processed and compared to the database to determine the sex.*”

The Petition relies on Gershman’s teaching of a computer processor, in communication with a digital camera that transmits photographic image data of a chick’s wings to the processor for image processing, as a partial disclosure of limitation [1.4]. Pet. 23 (citing Ex. 1003, 2, 4, 5). The Petition asserts that “Gershman teaches that the computer compares the chick’s wing feathers to those of other chicks to determine the sex of the chick.” *Id.* (citing Ex. 1003, 4). The cited page in Gershman discloses the use of graphed reference data of wing patterns—“and manually draw 2 polygons, limiting the areas of males and females [wing “compactness” and “roughness”], and to place this data in memory of computer”—for comparison to captured image data of a chick’s wing feathers. Ex. 1003, 4; *see also id.* at 10, Fig. 11 (graphed polygons of male and female wing compactness and roughness used as “sorting parameters”). The Petition acknowledges, however, that Gershman does not disclose or teach “that the computer includes a database of images of male and female wing patterns” as recited in limitation [1.4]. Pet. 23.

The Petition relies on Pierre’s teaching of “reference images recording a specific state” of a chick that includes different wing patterns for different genders. Pet. 23 (citing Ex. 1004, 3). Pierre states:

An essential step to implement in the application of the invention therefore consists in promoting the opening of the bird's wings in order to be able to examine the deep feathers at the same time as the superficial feathers, using automated visometry means, and to thus obtain a digital image of the whole. Then *a computerized processing process is implemented in order to compare the captured images to reference images recording a specific state for each animal examined*, to deduce from this a characteristic to attribute to it.

Such elements to be detected by the use of the invention are specifically related to race or species . . . the state of the bird's health, the sex of chicks, or their age.

Ex. 1004, 3–4 (emphasis added). The Petition argues it would have been obvious to store a collection of reference images in a database as recited in limitation [1.4], such as Pierre's reference images showing visible differences in plumage between a rooster (male) and a hen (female), "in order to organize the collection of reference images." Pet. 23–24 (citing Ex. 1004, 3); *see also* Ex. 1004, 5 ("differences in plumage [] are seen clearly, for example between a rooster and a hen"). The Petition further argues:

It would have been obvious to a POSITA to store the reference images of male and female wing patterns taught by Pierre in a database in the computer of Gershman as an alternative or additional means of analyzing the image of the chick to determine the sex of the chick with a reasonable expectation of success.

Id. at 24.

With regard limitation [1.5], the Petition points to Gershman's disclosure that a chick is photographed, and the digital image transmitted to the computer for processing. *Id.* (citing Ex. 1003, 2–3 (1 stage)). The Petition invokes Pierre for teaching "that a digital image is compared with reference images to determine the sex of a chick." *Id.* (citing Ex. 1004, 5). The Petition argues:

It would have been obvious to a POSITA to use the computer of Gershman to compare the image with the database of reference images

of male and female wing patterns in order to determine the sex of the chick, as taught by Pierre, with a reasonable expectation of success.

Id.

Patent Owner counters that

Pierre does not disclose “a database” at all, much less one of images of the particular features claimed. It follows that Pierre also does not compare an image of a chick to a database of images either, as required by all independent claims.

Rather, *Pierre teaches that a single image of a chick is compared to a single reference image*. Ex. 1004, 4 (“in order to compare an image of opened wings . . . with **a reference image**”); 5 (“the results of the examination of its plumage in comparison with **a reference image**”); 5 (“the capturing of the digital image used for processing by comparison with a reference image”). . . . The comparison in Pierre, however, is always to a single reference image. *By contrast, the ’124 patent requires that a database consisting of multiple images is the basis for which the claimed “comparison” occurs*, which has the advantage of increasing the classification accuracy (e.g., “female” vs. “male” determination).

Resp. 40–41 (citing Ex. 1001, 6:58-62; Ex. 2003 ¶¶ 46–49) (non-bold italics added). Patent Owner argues that Petitioner has failed to meet its burden of proof “to show disclosure of the claimed database.” *Id.* at 41. We disagree.

a. Gershman-Pierre discloses limitation [1.4]

We first note limitation [1.4] recites a generic “*computer processor having a database of images of male and female wing patterns.*” The claims do not recite, and the ’124 patent specification does not describe, any specialized programming or attributes for the claimed computer processor beyond a database that stores images of male and female wing patterns for a particular breed, such as the reference images of roosters and hens disclosed in Pierre. Pierre, moreover, explains the motivation for comparing a captured image with a plurality of reference images: “each reference image records a specific state that can be used

to determine a characteristic [of the chick] . . . [that] manifests in one of two or more possible states, e.g., sex (male vs. female), health (healthy vs. unhealthy), genetic mutation (present vs. not present).” Reply 13 (citing Ex. 1004, 3). The recitation of a generic “database of images” does not distinguish limitation [1.4] from the asserted combination of Gershman-Pierre, particularly in view of Pierre’s disclosure of “a *computerized processing* process is implemented in order to compare the captured images to reference images,” as asserted in the Petition. Ex. 1004, 3 (emphasis added); *see* Pet. 23–24 (citing Ex. 1003, 2–5; Ex. 1004, 3, 5). Thus, we find that storage of Pierre’s reference images of male and female wing feathers in a database used for comparison in Gershman’s computerized digital chick image processing system would have been obvious to a POSITA and satisfies limitation [1.4].¹⁹

We agree with Petitioner that it would have been obvious and well within the skill level of a POSITA—someone with a Bachelor of Science degree in agricultural, industrial, or electrical engineering and two years of experience in industrial poultry sexing and/or image processing (Resp. 20)—to store reference images as taught by Pierre in a “computerized processing” database. The rationale argued by Petitioner, to organize the collection of reference images for comparison to determine whether the characteristic of interest was present, finds direct support in Gershman and Pierre. Both references disclose comparing digital images of a chick’s wing feathers to reference data (Gershman) or reference images (Pierre) of male and female chick wing patterns. Pet. 23–24; Reply 12–13. Storing digital reference images in a database for comparison to captured digital images is, moreover, a basic and straightforward task in any computerized image processing

¹⁹ Claim 6 recites “determining the health” of a chick, and claim 9 recites “sorting chicks on the basis of a predetermined feature of a chick.”

system and within the skill level of a POSITA.

b. Gershman-Pierre discloses limitation [1.5]

We further agree with Petitioner that it would have been obvious to use Gershman's computerized chick processing system to compare a digital image of a chick's open wings with a database of Pierre's reference images of male and female wing patterns to determine the sex of the chick. Pet. 24. Patent Owner's attack on the motivation to use a database of Pierre's reference images in Gershman's system is off the mark. Resp. 6–9, 53–58 (citing Ex. 2002 ¶¶ 167–175). The Petition's stated rationale, to organize Pierre's reference images as a database for comparison against captured chick images in Gershman's computerized image processing system is simple, straightforward, and within the skill level of a POSITA. A POSITA would have been familiar with computerized techniques for assessing and transporting poultry in an industrial setting, such as visual and/or anatomical characteristics of a chick expressly taught by Gershman, Pierre, and Tao. *See* Tao Ex. 1006, Abstract (“The computer system hosts the digital imaging system and it executes the decisions made by the digital imaging processing system.”). Pierre simply expands on the application of the basic elements already provided by Gershman by expressly providing for “reference images” to be organized in a database. Reply 22.

The absence of expert testimony is not “fatal to the Petition” as argued by Patent Owner. Resp. 55. The express disclosures and teachings in the prior art provide sufficient support for the Petition's obviousness challenge. The Board, sitting as a non-jury tribunal with administrative expertise, is well-positioned to determine and assign appropriate weight to evidence presented. *See Gnosis S.p.A. v. S. Alabama Med. Sci. Found.*, Case IPR2013-00118, slip op. at 43 (PTAB June 20, 2014) (Paper 64). The Federal Circuit has made clear that expert opinions are

not always necessary because “[i]n many patent cases . . . the technology will be easily understandable without the need for expert explanatory testimony.” *Perfect Web Techns., Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1329 (Fed. Cir. 2009) (citation omitted). This is such a case.

Thus, we find the use of Gershman’s computerized digital image processing system to compare “*at least one image of the chick*” to a “*database of male and female wing patterns*,” such as the reference images taught by Pierre, “*to determine the sex*” of the chick as taught by both Gershman and Pierre, is nothing more than the “application of a known technique to a piece of prior art ready for improvement” that satisfies limitation [1.5]. *KSR*, 550 U.S. at 417; *see also id.* at 418 (an obviousness analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ”).

Patent Owner also criticizes the Petition’s articulated motivation to combine Gershman with Pierre because the Petition does not “address the challenges and realities of industrial poultry processing,” and a POSITA would not have been motivated “to modify the experimental, manually movable plate of Gershman to integrate it into Pierre’s industrial poultry processing system.” Resp. 7–9, 53–58 (citing Ex. 2002 ¶¶ 57–60, 167–175). Patent Owner’s criticism is grounded in unclaimed subject matter—the claims do not recite an industrial poultry processing system that can “process chicks at an astoundingly high rate” or avoid bottlenecks caused by processing chicks “one at a time” on a moving platform. *Id.* Moreover, “controlling chick traffic and dividing chicks into single file was well known in the hatchery art in 2015.” Ex. 1008 ¶ 32; *cf.* Ex. 1001, 3:50–53 (“chick . . . traveling along the first conveyor in single file fashion”). We are also persuaded that

managing chick waste in automated chick conveyance systems was well known in the industry in 2015, and would not have rendered Gershman's system "unworkable" as argued by Patent Owner. Resp. 56; Reply 21 (citing Ex. 1008 ¶ 37).

Patent Owner's next argument, that a POSITA would not have integrated Gershman's moving plate into Pierre's system, addresses an argument Petitioner did not make. Resp. 53 (citing Pet. 24); Reply 18–19. Rather, as Petitioner correctly points out, Patent Owner does not address the rationale stated in the Petition for organizing Pierre's reference images as a database in Gershman's computerized digital image processing system. *Id.* Patent Owner's argument also presumes that Gershman and Pierre need to be physically combinable. They do not. "[I]t is not necessary that [two pieces of prior art] be physically combinable to render obvious" the claims. *Allied Erecting & Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016) (*quoting In re Sneed*, 710 F.2d 1544, 1550 (Fed. Cir. 1983)).

Petitioner further notes that the Petition relies on "Pierre's explicit teaching of comparing captured **images** with a plurality of reference **images**," not a comparison to a "single" reference image as argued by Patent Owner. Reply 12; *compare* Pet. 23–24 (citing Ex. 1004, 3) *with* Resp. 39–41 (citing Ex. 2003 ¶¶ 46–49, 55–60); *see also* Sur-Reply 17–18 ("in Pierre the comparison is always made between an image of the chick and a **single** reference image, not a plurality of reference images." (citing Ex. 2003 ¶ 47)). The Declaration of Dr. Karam, Patent Owner's database expert, makes the same error that undermines the entire analysis. Ex. 2003 ¶¶ 46–52. We agree with Petitioner that by focusing on the disclosure of a "single" reference image, without addressing Pierre's explicit teaching to compare captured images to reference images to determine the sex or

health of a chick, Patent Owner fails to address the substance of the Petition’s argument. Reply 12. We further agree with Petitioner that Pierre does not disclose the use of a “single” reference image, and the insertion of the term “single” by Patent Owner significantly modifies Pierre’s actual teaching to a POSITA, which would have included a comparison of at least one captured chick image to reference images of male and female wing patterns to determine the chick’s sex or health. Reply 13–14.

In the end, Patent Owner’s argument and evidence do not undermine Pierre’s teaching the use of reference images for comparison in a digital imaging processing system. Pierre teaches it is essential to promote “the opening of the bird’s wings . . . to examine the deep feathers at the same time as the superficial feathers . . . to thus obtain a digital image of the whole.” Ex. 1004, 3. The digital image (or images) of a bird’s wing feathers is processed by a computer “to compare the captured images to reference images recording a specific state for each animal . . . [including] the state of the bird’s health, the sex of chicks, or their age.” *Id.* at 3–4. The reference images of a chick’s wing feathers “reveal variations in sizes of one row of feathers or another, because differences in plumage that are seen clearly, for example between a rooster and a hen [are] already detectable at an early stage in the growth of the chick.” *Id.* at 5; *see* Pet. 23–24 (citing Ex. 1004, 3, 5). It would have been obvious for a POSITA to store Pierre’s reference images of male and female chick wing feathers in a database for use in a comparative system such as Gershman, such that “*at least one image of the chick . . . is processed and compared to the database to determine the sex*” of a chick as recited in limitation [1.5].

c. Conclusion

For the reasons given above, we determine Petitioner has established by a

preponderance of the evidence that Gershman-Pierre discloses and teaches limitations [1.4] and [1.5] and their corresponding limitations in independent claim 6 and 9.

3. *The Petition Has Not Established that Gershman Discloses or Teaches Claims 3 and 15 (Grounds 1 and 7)*

Claim 3 depends from claim 1 and recites “*wherein the stimuli may be one or more of the following group: an angled conveyor, a vibrating conveyor, a strobe light, or a stream of air blowing on the chick.*”²⁰ In Ground 1, the Petition asserts that “Gershman teaches blowing compressed air on a chick.” Pet. 25 (citing Ex. 1003, 4 (2 stage), 6 (Results)). Gershman expressly teaches the use of “air ejectors for blowing chickens and appropriate bins” and “blowing chick from a plate with compressed air (1.6 ATM) without any damage.” Ex. 1003, 4, 6. The Petition argues that “it is understood that blowing air on a chick is a stimulus that can cause chicks to open their wings.” Pet. 25.

Gershman does not expressly disclose or teach that air “ejectors”—using compressed air to blow a chick off of the moving plate into a bin after image capture—would “*cause the chick to open its wings*” as recited in claim 1. The Petition is not supported by any declaration testimony to explain why “it is understood” that Gershman’s air “ejectors” would cause a chick to open its wings, rather than simply using air to push a chick off the moving plate into a bin without injuring the chick as taught by Gershman. Patent Owner, moreover, has introduced un rebutted testimony from Dr. Keener that a POSITA would understand Gershman’s “‘air ejectors for blowing chickens’ could be used to move the

²⁰ The language of claims 3 and 15 are not drafted in traditional Markush group form, which “requires selection from a closed group ‘consisting of’ the alternative members.” MPEP 2117 (citing *Abbott Labs v. Baxter Pharmaceutical Products, Inc.*, 334 F.3d 1274, 1280 (Fed. Cir. 2003)).

chickens into ‘appropriate bins’ [and would understand that] [t]his is not a ‘stimuli’ to make the chicks open their wings,” because the air is applied after image capture of the falling chick’s wings. Resp. 38–39 (citing Ex. 1003, 4, 6; Ex. 2002 ¶ 145). Petitioner does not address Patent Owner’s argument, or Dr. Keener’s unrebutted testimony directed to claims 3 and 15. *See* Reply 18–22.

Claim 15 depends indirectly from independent claim 9 and recites the same limitation as in claim 3. In Ground 7, the Petition makes the same argument and relies on the same evidence to assert that Gershman discloses claim 15, again without responding to Dr. Keener’s unrebutted testimony. Pet. 54 (citing Ex. 1003, 4, 6); Reply 18–22. Our analysis of claim 3 applies equally to claim 15.

Given the lack of explanation in the Petition, Dr. Keener’s unrebutted testimony, and the absence of any Reply addressing Patent Owner’s argument regarding patentability of claims 3 and 15, we determine Petitioner has not established by a preponderance of the evidence that Gershman discloses or teaches claims 3 and 15.

4. Pierre-Gershman (Grounds 4 and 6) and Tao (Grounds 6 and 7)

Patent Owner does not contest the Petition’s evidence and argument that the additional limitations recited in claims 2 and 4–14 (not addressed above) are disclosed in Gershman, Pierre, and/or Tao as set forth in Grounds 4, 6, and 7 of the Petition. *See* Resp. 27–42 (addressing limitations [1.1], [1.4], and [1.5] and claim 3). Having reviewed the Petition’s evidence and argument, we determine that Petitioner has established by a preponderance of the evidence that the additional limitations recited in claims 2 and 4–14 are disclosed and taught in Gershman, Pierre, and/or Tao as set forth in Grounds 4, 6, and 7 of the Petition. Pet. 35–54 (citing Ex. 1003, 1–6, Fig. 11; Ex. 1004, 3–4, claims 3, 4; Ex. 1006, 5:36–38,

5:52–59, 5:66–6:1, 6:1–16, Figs. 1, 2).

We note that Petitioner makes arguments similar to those made in Ground 1 when applying Pierre-Gershman to independent claims 1 and 6 in Ground 4, with the caveat that claim 6 is directed to “determining the health” rather than the “sex” of a chick. *See* Pet. 35–41. Our analysis for Gershman-Pierre applied to claim 1 in the previous section addressing Ground 1, and the uncontested evidence cited in the Petition for Ground 4 (Pet. 35-41), supports our determination that Petitioner has established by a preponderance of the evidence that the limitations recited in claims 1, 6, and 7 are disclosed and taught by Pierre-Gershman (Ground 4).

D. Secondary Considerations and Conclusion of Obviousness

Patent Owner contends that secondary considerations “strongly support non-obviousness.” Resp. 65 (citing Ex. 2002 ¶¶ 187–193). Patent Owner asserts the claimed invention in the ’124 patent satisfied a long-felt need for fast and accurate chick processing while “prioritizing chick welfare.” *Id.* at 65–66. Patent Owner further asserts the claimed invention achieved unexpected results by “creating a system where a chick is *unrestrained yet supported* as it is imaged.” *Id.* at 67.

Objective indicia of nonobviousness may include a long-felt but unsolved need, failure of others, unexpected results, commercial success, copying, licensing, industry praise, and expert skepticism. *Mintz v. Dietz & Watson, Inc.*, 679 F.3d 1372, 1379 (Fed. Cir. 2012). Objective indicia are only relevant to the obviousness inquiry if there is a nexus between the claimed invention and the objective indicia of nonobviousness. *In re Affinity Labs of Tex., LLC*, 856 F.3d 883, 901 (Fed. Cir. 2017). “The patentee bears the burden of showing that a nexus exists” *WMS Gaming Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1359 (Fed. Cir. 1999). A rebuttable presumption of nexus applies only “when [a patent owner] shows that

the asserted objective evidence is tied to a specific product and that product ‘embodies the claimed features, and is coextensive with [the claims].’” *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (quoting *Polaris Indus. v. ArcticCat, Inc.*, 882 F.3d 1056, 1072 (Fed. Cir. 2018)). We agree with Petitioner that Patent Owner’s assertions of the ’124 patent satisfying a long-felt need and achieving unexpected results are conclusory and not supported by sufficient evidence. Reply 25–26.

For example, Patent Owner asserts in one sentence that the ’124 patent offered an “elegant solution” to the long-felt need for fast and accurate chick processing while “prioritizing chick welfare.” Resp. 66 (citing Ex. 2002 ¶ 190). Dr. Keener’s cited opinion testimony, however, offers only the same conclusory assertion without further explanation, detail, or factual support as to how the claimed system satisfied the need. Ex. 2002 ¶ 190. When asked at his deposition about the ’124 patent providing an “elegant solution” to the asserted long-felt need, Dr. Keener readily acknowledged that he did not “have information about [] the commercial systems, if there are commercial systems,” and he did not know “whether the commercial system itself embodies all of those elements.” Ex. 1010, 116:11–117:6. Moreover, as Petitioner emphasizes with regard to asserted unexpected results, Patent Owner has not provided evidence of any results achieved by the patented system, much less in a favorable comparison to prior art systems. Reply 26–27.

In short, Patent Owner’s conclusory arguments and evidence are not sufficient to satisfy Patent Owner’s burden of establishing a nexus between the system claimed in the ’124 patent and satisfaction of the asserted long-felt need or achievement of unexpected results. Therefore, we do not accord any weight to Patent Owner’s argument that secondary considerations support non-obviousness

of the claimed invention.

In conclusion, for the reasons given above, we determine that Petitioner has established by a preponderance of the evidence that claims 1, 2, and 4–14 of the '124 patent are obvious over Gershman-Pierre, Gershman-Pierre-Tao, Pierre-Gershman, and Pierre-Gershman-Tao as asserted in Grounds 1, 4, 6, and 7 of the Petition. We also determine that Petitioner has not established by a preponderance of the evidence that claims 3 and 15 of the '124 patent are obvious over Gershman-Pierre (Ground 1, claim 3) or Gershman-Pierre-Tao (Ground 7, claim 15).

IV. YAVNAI AND PIERRE – GROUNDS 2 AND 8

Petitioner contends that independent claim 1 and dependent claim 3 of the '124 patent would have been obvious over Yavnai in view of Pierre (Ground 2) and claims 2, 4, 8, and 9–18 would have been obvious over Yavnai in view of Pierre and Tao (Ground 8) under 35 U.S.C. § 103. Pet. 25–29, 54–64. Patent Owner responds that Yavnai fails to disclose (i) “*an unrestrained chick*” as recited in limitation [1.1] and (ii) an “*angled conveyor*” as recited in claims 16–18, which depend indirectly from claim 14. Resp. 42–51. For the reasons given below, we determine Petitioner has established that claims 1, 2–4, 8, and 9–15 are unpatentable as obvious over Yavnai-Pierre and Yavnai-Pierre-Tao (Grounds 2 and 8) by a preponderance of the evidence. We further determine Petitioner has not established that claims 16–18 are unpatentable as obvious over Yavnai-Pierre-Tao (Ground 8).

A. Yavnai-Pierre Teaches Limitations [1.0]–[1.5] and Claim 3 (Ground 2)

In Ground 2, the Petition contends that Yavnai discloses limitations [1.0]–[1.3] and Yavnai-Pierre discloses limitations [1.4]–[1.5] and claim 3. Pet. 25–29

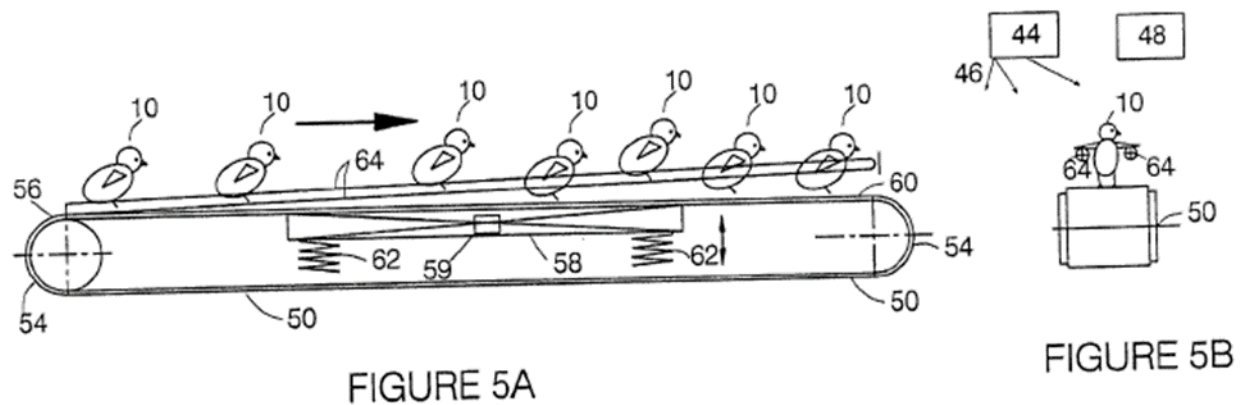
(citing Ex. 1004, 4–5; Ex. 1005, (Abstract), ¶¶ 11, 33–36, 38–39, 42, Figs. 5A, 5B). Patent Owner contests the assertion that Yavnai discloses limitation [1.1], but does not contest the Petition’s evidence and argument that Yavnai discloses limitations [1.0], [1.2]–[1.3] and claim 3. Resp. 42–51 (citing Ex. 2002 ¶¶ 148–163; Ex. 2003 ¶¶ 38–60). Patent Owner also contests Pierre’s disclosure of limitations [1.4] and [1.5] in combination with Yavnai for the same reasons discussed above regarding the disclosure of limitations [1.4] and [1.5] in Gershman-Pierre, an argument we have rejected (*see* Section III.C.1.–C.2.). Resp. 39–42.²¹

Having reviewed the Petition’s evidence and argument, we determine Petitioner has established by a preponderance of the evidence that Yavnai and Yavnai-Pierre disclose limitations [1.0]–[1.5] and claim 3 for the reasons stated in the Petition. Pet. 25–29. We also find that Petitioner has established by a preponderance of the evidence that a POSITA would have been motivated to combine Yavnai and Pierre with a reasonable expectation of success. Pet. 27–29 (citing Ex. 1004, 4–5 ; Ex. 1005 ¶¶ 36, 39, 42). We begin by addressing limitation [1.1] in view of Patent Owner’s arguments, our previous discussion of Yavnai, and our claim construction that “*an unrestrained chick*” is a chick not held in place on the moving platform and free to open its wings.

²¹ In Ground 2, Petitioner relies on Pierre’s teaching to use “reference images recording a specific state” of a bird, e.g., male or female, in the same way Petitioner relies on Pierre as disclosing limitations [1.4] and [1.5] in Ground 1 for determining a chick’s sex. Pet. 28 (citing Ex. 1004, 4). We find it would have been obvious to a POSITA that Yavnai’s camera “is in communication with a computer processor having the database of [Pierre’s] reference images,” to permit comparison of the captured image of a chick “in the computer processing method taught by Pierre” and to determine the sex of a chick with a reasonable expectation of success. *Id.* at 28–29.

1. Yavnai Discloses Limitation [1.1]

The Petition correctly notes that Yavnai discloses a chick “able to jump and spread its wings while on the conveyor belt.” Pet. 25 (citing Ex. 1005 ¶ 42). The Petition asserts that Yavnai Figure 5A depicts a chick moving on a conveyor where the chick’s wings “are not in contact with the poles on either side of the conveyor until the end.” *Id.* at 26 (citing Ex. 1005, Fig. 5A). Yavnai Figures 5A and 5B are reproduced below:



Ex. 1005, Figs. 5A, 5B. Yavnai Figures 5A and 5B, discussed previously, disclose “an unrestrained chick” because the chick is not held in place, is free to “jump up and down” on the conveyor, and opens its wings so the camera can capture an image of the chick’s open wings on the “support” poles. *Id.* at 26, 67–68; *see also* Ex. 1005 ¶ 42, Fig. 5B.

Patent Owner’s argument, that Yavnai “uses poles that restrain the chick’s legs and feet in the lateral direction [over the entire length of the moving platform]” and “prevent its wings from closing,” is based on a proposed claim construction that is inconsistent with the ’124 patent, inconsistent with the disclosures in Yavnai, and inconsistent with the reasons for distinguishing Tao as explained in detail above in Section II.B. *See* Resp. 43 (citing Ex. 1005, Abstract, ¶ 42; Ex. 2002 ¶¶ 149–150); *see also id.* at 44–49 (citing Ex. 2002 ¶¶ 153–160).

The '124 patent claims and specification do not recite or require “that the chick be unrestrained throughout the [] process” as argued by Patent Owner. *Id.* at 44–45 (citing Ex. 1001, 6:54–57 (limitation [1.1])). We also have rejected Patent Owner’s attempt to construe Yavnai’s support poles as a lateral “restraint” on the chick’s movement. *Id.* at 45–47 (citing Ex. 2002 ¶¶ 154–158). Yavnai does not teach a chick held in place on the moving platform, and Yavnai does teach a chick free to open its wings, i.e., “*an unrestrained chick.*” The chick’s freedom to open its wings on the moving platform within the substantially parallel support poles—“jumps up and spreads its wings”—is not a teaching that the chick is being “restrained.”²² Nor is the fact that the chick’s open wings are supported on the two parallel poles at image capture a restraint on the chick.

Patent Owner attempts to distinguish Yavnai’s support poles depicted in Figures 5A and 5B from the side rails depicted in Figures 3 and 6 of the '124 patent. *Id.* at 46 (citing Ex. 2002 ¶ 156). Patent Owner’s argument, that “[s]idewalls do not ‘restrain’ a chick” but are “necessary to keep the chick on the moving platform” is both inherently inconsistent and inconsistent with the '124 patent. *Id.* at 46 n.6, 49. Figures 3 and 6 of the '124 patent depict a pair of side rails on the moving platform that prevents the chick from falling off the platform. Ex. 1001, 4:20–21. Figure 1, like Yavnai, does not. As Petitioner points out, “the absence of sidewalls in Fig. 1 would mean that its system lacks any structures that prevent the chick from falling off of the platform despite PO’s assertion that structures are *necessary* to keep the chick on the moving platform in its own

²² The same analysis applies to Ground 8 (Yavnai-Pierre-Tao), which relies on Yavnai for teaching the “*unrestrained chick*” limitation and Pierre for teaching the “*database of images*” limitations [9.3] and [9.4]. *See* Pet. 54, 57–59.

system.” Reply 16 (citing Resp. 49). In short, Patent Owner cannot have it both ways.

2. *Antecedent Basis for “the chick”*

We agree with Petitioner that Patent Owner’s argument distinguishing Yavnai “relies on an implied deletion of existing antecedent basis for ‘the chick’ to assert that the claims require a chick be unrestrained *during* stimulation and imaging.” Reply 14 (citing Resp. 44–45). The claims recite system components, such as “*a moving platform capable of supporting an unrestrained chick*” (limitation [1.1]) and “*an image capture device to capture at least one image of the chick*” (limitation [1.2]). We agree that Patent Owner’s interpretation is incorrect because regardless of whether “the chick” refers to “*a chick*” in the preamble or to the “*unrestrained chick*” in limitation [1.1], the chick is not a component of the system. The chick is the object on which the system operates.

Alternatively, as Petitioner explains:

[T]he end of claim 1 concludes that the captured image is processed “to determine the sex.” Because “the sex of a chick” was introduced in the preamble, the preamble provides antecedent basis for “the sex” and it is the sex of the chick referred to in the preamble that is being determined.

The first element in claim 1 after the preamble is “the *moving platform* to support an unrestrained chick.” Here, during prosecution the moving platform was qualified to be a particular type of moving platform, i.e., to support an “unrestrained chick.” The requirement to support an “unrestrained chick” is simply a limitation on the moving platform. The amendment did not suddenly make the preamble not limiting or reintroduce the same chick. The later recitations of “the chick” that is stimulated and whose image is captured is the same chick whose sex is determined as set forth in the preamble and the end of claim 1.

Paper 33, 2. For similar reasons, we reject Patent Owner’s argument that the *Shoes*

by *Firebug* case is dispositive and requires reading “*the chick*” in limitations [1.2] and [1.3] as “*an unrestrained chick*,” in an effort to distinguish Yavnai. Resp. 44–45; Sur-Reply 15–17 (citing *Shoes by Firebug LLC v. Stride Rite Children’s Grp., LLC*, 962 F.3d 1362 (Fed. Cir. 2020)); Paper 37; *see also* Paper 33 (“Whether the chick itself is restrained at the time of imaging or when the sex is determined is simply not required by the ‘124 patent specification.”).²³ There is one “*unrestrained chick*” recited in the body of the claims; the one supported on “*a moving platform*.” There is no basis in the ‘124 patent claim language, specification, or prosecution history to limit other system components to an unrestrained chick.

3. *Motivation to Combine Yavnai-Pierre for Limitations [1.4], [1.5]*

Petitioner states that Yavnai “teaches that the image taken by the camera 48 is processed and the sex is determined based on sex distinguishable wing patterns,” but acknowledges that “Yavnai does not expressly teach the claimed database of images.” Pet. 27 (citing Ex. 1005 ¶ 39). For limitation [1.4], the Petition again relies on Pierre as teaching a “computer processing method where an image is captured by a camera and submitted for image processing,” and teaching the use of “reference images recording a specific state” of a bird. *Id.* at 28 (citing Ex. 1004, 4). The Petition argues it “would have been obvious to store a collection of reference images in a database to organize the collection of reference images,”

²³ Unlike the situation in *Shoes by Firebug*, the Applicant did not reintroduce “a chick,” and the issue in *Shoes by Firebug* involves whether the preamble is limiting. *See Shoes by Firebug*, 962 F.3d at 1362–1363. *Shoes by Firebug* also informs that antecedent basis is not solely determinative of whether the preamble is limiting. *See id.* at 1368 (“While antecedent basis alone is not determinative of whether a preamble is limiting, use of preamble terms to define positive limitations in the body of claims can evince an inventor's intent that the preamble limit the scope of the claim.”).

including reference images of male and female wing feathers as taught by Pierre. *Id.* at 28 (citing Ex. 1004, 4). We agree with the Petition’s argument for the reasons previously stated regarding the Gershman-Pierre combination relied upon in Grounds 1, 4, 6, and 7 of the Petition (Section III.C.2.).

The Petition also argues:

It would have been obvious to a POSITA that the camera of Yavnai is in communication with a computer processor having the database of reference images so that an image captured by the camera can be processed in the computer processing method taught by Pierre to determine the sex of a chick with a reasonable expectation of success.

Id. For limitation [1.5] the Petition similarly argues:

It would have been obvious to a POSITA that the camera of Yavnai can transmit an image to a computer processor having the database of reference images so that the image can be compared with reference images in the computer processing method taught by Pierre to determine the sex of a chick with a reasonable expectation of success.

Id. We agree with the Petitioner’s analysis, quoted above, and adopt it as our own.

As the Petition notes, the point of the Yavnai system is to process digital images of a chick in an automated chick sexing process. Pet. 25, 27 (citing Ex. 1005, Abstract (“method and apparatus of automatic sexing of a one-day-old chick . . . applying appropriate image processing to the photograph”), ¶ 39 (“The [digital] image taken by camera 48 is processed and sex identification is attempted based on the sex distinguishable wing feather patterns. (FIG. 2, box 22)”). Pierre makes explicit that an automated process may be efficiently implemented in a computerized system that compares digital chick images, such as those in Yavnai, to reference images as taught by Pierre. *Id.* at 28. We again agree with Petitioner that it would have been obvious to a POSITA to store Pierre’s reference images in a database for comparison to at least one captured chick image to determine the sex, health and other characteristics of the imaged chick. Reply 28–29 (citing Ex.

1004, 3–4 (“Then a computerized processing process is implemented in order to compare the captured [digital] images to reference images recording a specific state for each animal examined, to deduce from this a characteristic to attribute to it . . . [including] the state of the bird’s health, the sex of chicks, or their age.”).

Patent Owner contends a POSITA would not have been motivated to combine Yavnai and Pierre in order that Yavnai’s captured images could be compared to a database of reference images of the type taught by Pierre. Resp. 58–62 (citing Ex. 2002 ¶¶ 176–181). Patent Owner argues that “Yavnai requires the chick to be highly restrained with poles,” particularly at the point of image capture as shown in Figure 5B, otherwise “the system malfunctions.” *Id.* at 59–60 (citing Ex. 2002 ¶¶ 177–179). We have rejected the propositions on which Patent Owner relies to support its lack of motivation argument, namely that: (i) Yavnai restrains a chick with “support” poles, and (ii) the chick must be unrestrained during image capture. Those unsupported propositions undermine Patent Owner’s lack of motivation argument.

We also agree with Petitioner that Patent Owner’s attacks on Yavnai’s “industrial viability” do not undermine the straightforward Yavnai-Pierre combination proposed by Petitioner. Reply 22–23 (citing Ex. 1008 ¶¶ 41–47). The evidence does not support the conclusion that organizing Pierre’s reference images of male and female wing feathers as a database comparator, for use in Yavnai’s computerized image processing system, would have changed Yavnai’s principle of operation or caused the system to malfunction or become redundant as urged by Patent Owner. Resp. 61–62. As Mr. LeCroy testifies, “rotating an image to a desired position could have been readily done and would not have prevented Yavnai from operating.” Ex. 1008 ¶ 46. Petitioner further argues:

Finally, even if the Pierre comparison to a database of images were

redundant as PO proposes, the addition of the Pierre process to check or confirm Yavnai's own processing would itself provide a reason for adding the comparison step to the Yavnai system.

Reply 24. We agree with Petitioner that “[n]othing in Yavnai indicates that its approach is so essential or perfected as to render any alternative methods of image analysis redundant.” Reply 23. (citing Ex. 1005 ¶ 39). We agree with Petitioner's reasoning, which is consistent with Yavnai and Pierre. *See KSR*, 50 U.S. at 417 (“[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.”).

We find a POSITA would have been sufficiently motivated to use Pierre's reference images, stored in a database for comparison to at least one captured image of a chick, in Yavnai's image processing system as set forth in the Petition.

4. Conclusion

For the reasons given above, we determine Petitioner has established by a preponderance of the evidence that Yavnai-Pierre (Ground 2) discloses and teaches limitations [1.0]–[1.5] and claim 3 and renders claims 1 and 3 obvious under 35 U.S.C. § 103.

B. Yavnai-Pierre-Tao Teaches Claims 2, 4, 8, and 9–15 (Ground 8)

Patent Owner does not contest the Petition's evidence and argument that the additional limitations recited in claims 2, 4, 8, and 9–15 are disclosed in Yavnai-Pierre-Tao, with sufficient motivation for a POSITA to combine the cited teachings, as set forth in Ground 8 of the Petition. *See Resp.* 39–51 (addressing limitation [1.1] and claims 16–18). Having reviewed the Petition's evidence and argument, we determine Petitioner has established by a preponderance of the

evidence that the limitations recited in claims 2, 4, 8, and 9–15 are taught by Yavnai-Pierre-Tao as set forth in Ground 8 of the Petition. Pet. 54–63 (citing Ex. 1004, 3–4; Ex. 1005 ¶¶ 33–36, 38–40, 42, Fig. 5A; Ex. 1006, 5:36–38, 5:52–59, 5:66–6:16, Fig. 2).

We note that Petitioner makes similar arguments to those made in Ground 2 when applying Yavnai-Pierre to independent claim 9, with the caveat that claim 9 is directed to “sorting chicks on the basis of a predetermined feature,” does not recite a “at least one stimuli,” and recites a “removing means” not recited in independent claim 1. *See* Pet. 57–62 (Ground 8, claim 9). Our analysis for Yavnai-Pierre applied to claim 1 in the previous section, and the uncontested evidence cited in the Petition for Ground 8, supports our determination that Petitioner has established by a preponderance of the evidence that the limitations recited in claims 2, 4, 8, and 9–15 are taught by Yavnai-Pierre-Tao.

For the reasons given above, we determine Petitioner has established by a preponderance of the evidence that Yavnai-Pierre-Tao teaches claims 2, 4, 8, and 9–15 and renders those claims obvious under 35 U.S.C. § 103.

C. The Petition Has Not Established that Yavnai-Pierre-Tao Discloses or Teaches Claims 16–18 (Ground 8)

We focus on claim 16. Claim 16 depends from claim 15, which depends from claim 14.²⁴

Claim 14 recites: “*The system of claim 9 further comprising at least one stimuli proximate to the moving platform;*”

Claim 15 recites: “. . . wherein the stimuli may be one or more of the following group: an angled conveyor, a vibrating conveyor, a strobe light

²⁴ Our analysis applies equally to claims 17 and 18, which further depend from claim 16 directly or indirectly.

or a stream of air blowing on the chick;” and

Claim 16 recites: “*wherein the angled conveyor has a near end and a far end and the far end is lower than the near end.*”

The dispute centers on whether the Petition has established the obviousness of claim 16 by a preponderance of the evidence. We determine it has not.

The Petition contends that Yavnai’s teaching of a vibrating conveyor satisfies claim 15/14, a proposition not contested by Patent Owner and supported by the evidence as previously discussed. Pet. 63 (citing Ex. 1005 ¶¶ 33–36); Resp. 58–62. For claim 16, however, the Petition argues:

It is well known to a POSITA that a system for transporting live chicks *can include* an angled conveyor depending on the desired endpoint of the conveyor. An angled conveyor inherently has a near end and a far end with one end being lower than the other. It would have been obvious to a POSITA to *use an angled conveyor having a downward incline* to cause successive chicks to fall and open their wings on their own, as taught by Pierre. It also would have been obvious to a POSITA to use an angled conveyor having a downward incline as an unstable surface *to cause a chick to jump and spread its wings, as taught by Yavnai.*

Id. at 64 (emphasis added). The above argument contains three separate assertions of what would have been known or obvious to a POSITA. The argument, however, does not tie those assertions together in an articulated rationale based on rational underpinnings with evidentiary support sufficient to support Petitioner’s obviousness challenge to claims 16–18. We note the Petition does not cite to particular disclosures in Yavnai or Pierre or any expert declaration support.²⁵

Whether or not a POSITA would have known that a chick transport system could have included an angled conveyor, by itself, is insufficient. We note that

²⁵ In contrast, the Petition cites to specific paragraphs in Yavnai to support the asserted obviousness of claims 14 and 15. Pet. 63 (citing Ex. 1005 ¶¶ 33–36).

“obviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.” *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (citing *InTouch Techs., Inc. v. VGO Commc’ns, Inc.*, 751 F.3d 1327, 1352 (Fed. Cir. 2014)). We also find the Petition to be internally inconsistent and lacking evidentiary support for the asserted motivation to use a downwardly angled conveyor to cause a chick to *fall* and open its wings, as allegedly taught by Pierre, while also causing the chick to jump *up* and spread its wings as taught by Yavnai.

To be clear, Yavnai teaches a vibrating conveyor that causes a chick to jump up—not down—to open its wings. Ex. 1005 ¶¶ 34–36, 42, Figs. 3, 5A, 5B. Pierre teaches that a falling chick will open its wings for image capture, but does not disclose or teach any mechanism or structure for doing so, much less an angled conveyor as implied by the Petition’s argument. *See* Ex. 1004, 4 (“placing each bird under conditions causing it to open its wings, across from a digital image capturing camera”), 5 (“putting each bird into a situation where it is falling, such that, while falling, it opens its wings itself”). The Petition’s arguments for the unpatentability of claims 16–18 are conclusory, inconsistent, and not supported by evidence sufficient to satisfy Petitioner’s burden of proof by a preponderance of the evidence. We also credit Dr. Keener’s unrebutted testimony that “neither Pierre nor Yavnai discloses angled conveyors whatsoever, and Petitioner points to nothing else for evidence that these would have been ‘well known’ or obvious for purposes of achieving the solution of claims 16-18.” Ex. 2002 ¶ 149.²⁶ Thus, we determine the Petition does not establish by a preponderance of the evidence a

²⁶ The Reply does not rebut Dr. Keener’s cited testimony. Reply 12–14, 22–24.

sufficient rationale for combining Yavnai and Pierre as a disclosure or teaching of “*the angled conveyor*” recited in claim 16.

For the reasons given above, we determine Petitioner has not established by a preponderance of the evidence that Yavnai-Pierre-Tao discloses or teaches claims 16–18 or that Yavnai-Pierre-Tao otherwise renders those claims obvious under 35 U.S.C. § 103.

V. MOTION TO STRIKE EX. 1008 AND RELATED REPLY ARGUMENTS

Patent Owner filed a motion to strike the expert declaration of Mr. LeCroy (Ex. 1008) and all Reply arguments of Petitioner that rely on Mr. LeCroy’s declaration testimony. Paper 22 (hereafter “Motion” or “Mot. Strike”). Patent Owner’s Motion asserts that the Reply includes new interpretations of the prior art, new arguments for applying certain claim limitations to the prior art, and new opinions that would be highly prejudicial to Patent Owner. Mot. Strike. 1–2. Patent Owner further asserts that Mr. LeCroy’s declaration testimony and Petitioner’s Reply are in conflict with our rules. *Id.* at 2–3 (citing our Consolidated Trial Practice Guide (Nov. 2019) (“Guide”) at 73–74; *Hulu v. Innovations*, IPR2018-00582, 2019 WL 6790791, at *11 (PTAB Aug. 5, 2019)). For the reasons given below, we grant the Motion in part and deny the Motion in part.

Pursuant to 37 C.F.R. § 42.23(b), a reply “may only respond to arguments raised in the corresponding . . . patent owner response.” *See Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369–70 (Fed. Cir. 2016) (concluding the Board did not abuse its discretion in refusing to consider reply brief arguments advocating a “new theory” of unpatentability under 37 C.F.R. § 42.23(b)); *Apple Inc. v. e-Watch, Inc.*, IPR2015-00412, Paper 50, 44 (PTAB May 6, 2016) (“‘Respond,’ in the context of 37 C.F.R. § 42.23(b), does not mean embark in a new direction with a new approach as compared to the position

originally taken in the Petition. Accepting such belatedly presented new arguments would be unjust to the Patent Owner and we decline to do so.”); Guide, 74 (“While replies and sur-replies can help crystalize issues for decision, a reply or sur-reply that raises a new issue or belatedly presents evidence may not be considered.”).

We have made a careful review of Mr. LeCroy’s Declaration. We find Patent Owner’s Motion to be overbroad in seeking an order to strike the entire declaration. For example, Mr. LeCroy discusses his background qualifications in paragraphs 4–11.²⁷ Ex. 1008 ¶¶ 4–11. We find nothing improper in Mr. LeCroy testifying to his background qualifications in rebuttal to Patent Owner’s arguments. In fact, we find Mr. LeCroy’s background helpful in understanding his testimony and the parties’ arguments and have cited his qualifications in this Decision.

Mr. LeCroy next testifies to “General Comments Related to Chick Hatcheries” in paragraphs 12–21 of his Declaration. Ex. 1008 ¶¶ 12–21. These general comments are not made in direct rebuttal to Dr. Keener’s testimony or Patent Owner’s arguments and should have been provided with the Petition. For example, the photographic image and discussion of what a chick cyclone is and how it works is the type of background and context that we would have expected to be submitted with the Petition in support of Petitioner’s arguments. *See* Ex. 1008 ¶¶ 13–16. Therefore, we grant Patent Owner’s motion to strike paragraphs 12–21 of Mr. LeCroy’s Declaration. We have not relied on or cited to paragraphs 12–21 of Mr. LeCroy’s Declaration testimony in this Decision.

²⁷ The Declaration Table of Contents identifies the section with Roman numeral “II. PROFESSIONAL BACKGROUND,” but page 2 of the declaration uses Roman numeral VI. for the same title. That numbering error is carried through the declaration. We will refer to the paragraph numbers of the declaration.

In paragraphs 22–51, Mr. LeCroy provides opinion testimony in direct rebuttal to Patent Owner’s Response arguments. Ex. 1008, 9 n.1. We find Mr. LeCroy’s rebuttal testimony to be in compliance with our rules and helpful in crystalizing the issues for decision, without raising new theories of obviousness or embarking on a new direction in support of the Petition. We begin with a discussion of the Reply argument, criticized by Patent Owner as an improper new theory, that the springs in Gershman’s system “support[] a chick while moving vertically upward.” Reply 10 (citing Ex. 1003, 4; Ex. 1008 ¶ 34).

The Petition’s theory of how Gershman discloses “*a moving plate*” as recited in limitation [1.1], is that in Gershman’s system a chick is placed on a moving plate and then the plate and chick are pushed downward to induce the chick to fall and open its wings, as previously discussed. Pet. 9–10, 22. In Reply to Patent Owner’s Response, Petitioner contends that “Gershman also supports a chick while moving vertically upward” and that “Gershman contemplates integration of the moving platform into an industrial chick sorting system and proposes that chicks can be transported by moving platforms with *springs*” such that “the platform moves both vertically upwards and downwards.” Reply 10. Petitioner cites to paragraph 34 of Mr. LeCroy’s declaration in support of the argument that Gershman uses springs to move the chick and moving plate vertically upwards. *Id.* (citing Ex. 1008 ¶ 34).

Although Patent Owner is correct that the Petition does not assert there is any upward movement of Gershman’s moving plate (Mot. Strike 4), Petitioner’s Reply argument was made in rebuttal to Patent Owner’s Response that Gershman-Pierre “requires putting individual chicks, one by one, onto the stationary plate and individually performing the drop plate operation.” Resp. 54; Reply 10 (citing

Resp. 54). In any event, we do not rely on Petitioner’s Reply argument that Gershman’s springs move the chick and plate vertically upward. Nor do we rely on the last two sentences of paragraph 34 in Mr. LeCroy’s Declaration where he addresses such asserted vertical movement.

We find the remainder of Mr. LeCroy’s Declaration to be proper rebuttal testimony. Patent Owner’s remaining complaints do not rise to the level of demonstrating a new theory of unpatentability or other impropriety in the Reply and supporting declaration of Mr. LeCroy. Mot. Strike 5–7. Moreover, our Guide provides that:

In most cases, the Board is capable of identifying new issues or belatedly presented evidence when weighing the evidence at the close of trial, and disregarding any new issues or belatedly presented evidence that exceeds the proper scope of reply or sur-reply. As such, striking the entirety or a portion of a party’s brief is an exceptional remedy that the Board expects will be granted rarely.

Guide, 80. We have followed that guidance here.

VI. CONCLUSION²⁸

We conclude Petitioner has shown claims 1–15 of the ’124 patent are unpatentable, but has not shown that claims 16–18 are unpatentable. In summary:

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claim(s) Shown Unpatentable	Claim(s) Not shown Unpatentable
1, 3	103	Gershman-Pierre	1	3

²⁸ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claim(s) Shown Unpatentable	Claim(s) Not shown Unpatentable
1, 3	103	Yavnai-Pierre	1, 3	
1, 6, 7	103	Pierre-Gershman	1, 6, 7	
8	103	Pierre-Gershman-Tao	8	
2, 4, 5, 9–15	103	Gershman-Pierre-Tao	2, 4, 5, 9–14	15
2, 4, 8, 9–18	103	Yavnai-Pierre-Tao	2, 4, 8, 9–15	16–18
Overall Outcome			1–15	16–18

VII. ORDER

Accordingly, it is

ORDERED that Petitioner has shown by a preponderance of the evidence that claims 1–15 of the '124 patent are unpatentable; and

FURTHER ORDERED that Petitioner has not shown by a preponderance of the evidence that claims 16–18 of the '124 patent are unpatentable;

FURTHER ORDERED that paragraphs 12–21 in Exhibit 1008, and corresponding Reply argument, are stricken from the record and have not been relied on in this Decision; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

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Patent 10,806,124 B2

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