

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

Petitioner,

v.

TARGAN, INC.,
Patent Owner.

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

PATENT OWNER RESPONSE

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EXHIBIT LIST

No.	Exhibit
1001	U.S. Patent No. 10,806,124 to Karimpour
1002	Prosecution history of Application No. 15/775,706, resulting in U.S. Patent No. 10,806,124
1003	Gershman, Y., “A simple way to determine the sex of one-day poultry chickens”; The Papers of Independent Authors [online]; vol. 28, DNA 2014, [https://vixra.org/pdf/1405.0016v1.pdf] (as cited by Applicant)
1004	FR Patent Publication No. 2909836 to Pierre et al., with Certified English Translation
1005	U.S. Patent Publication No. 2001/0035370 to Yavnai et al.
1006	U.S. Patent No. 6,396,938 to Tao et al.
1007	U.S. Patent No. 3,994,292 to Goodwin
2002	Declaration of Kevin Keener, Ph.D., P.E.
2003	Declaration of Lina J. Karam, Ph.D.
2004	Curriculum Vitae of Lina J. Karam, Ph.D.
2005	Excerpts from Merriam Webster Dictionary
2006	Adjanohoun et al., “Chick processing and automation within the hatchery”; International Hatchery Practice, Vol. 22 No. 8, pp 7-11.
2007	Curriculum Vitae of Kevin Keener, Ph.D., P.E.

I. SUMMARY OF ARGUMENT

The Petition is deficient on its face, and the Board should not find any of the claims unpatentable. As the Board is aware, the Patent Owner's Preliminary Response argued only for discretionary denial. ID, 6. Patent Owner ("PO") did so in the interest of judicial economy given the Examiner had already extensively addressed the primary references Petitioner relied on.

Because the Board declined to exercise discretionary denial, PO turns to the many reasons the Petition fails on the merits. Petitioner presents only obviousness arguments—***all supported solely by conclusory attorney argument about what a POSITA would allegedly know and do, but, tellingly, unsupported by any expert analysis.*** These attorney arguments fail for two main, independent reasons: *First*, none of the proffered combinations disclose all limitations of the independent claims (Claim 1, 6, and 9).¹ Ex. 2002, ¶37. *Second*, a POSITA would not have been motivated to make the combinations presented, nor had a reasonable expectation of success ("RES") in doing so. *Id.*

¹ Grounds 1-4 and 7-8 proffer combinations purportedly disclosing the limitations of the independent claims, but none do.

A. The Proffered Combinations of Prior Art Fail to Disclose All Limitations of the Independent Claims

Gershman (Ex. 1003): Petitioner relies on Gershman as disclosing “a ***moving platform to support*** an unrestrained chick” (Claims 1 & 9) and “a ***moving platform*** upon which an unrestrained chick ***is supported***” (Claim 6),²³ but Gershman does not. *See infra* Section VII.A.1. As claimed in the ’124 patent, the platform supports the chick when the platform is in motion (*i.e.*, moving). Gershman, however, teaches the opposite: a platform that is designed ***to not support*** the chick when the platform is in motion. Ex. 2002, ¶39.

Gershman discloses using a plate that is either stationary and supporting the chick, or moving and not supporting the chick. *Id.*, ¶¶39-45. But, the platform is never moving ***and*** supporting a chick, as required by the claims. *Id.* That ends the inquiry, and all grounds based on Gershman fail.

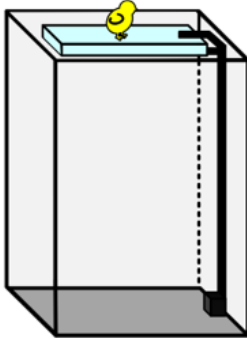
In Gershman, a chick is initially supported, but only by a plate that is stationary, as illustrated in the below demonstrative (Step 1). *Id.*, ¶¶40-41.

² Grounds 1, 4, 6, and 7 rely on a combination of Gershman and Pierre.

³ Emphases added unless otherwise noted throughout this brief.

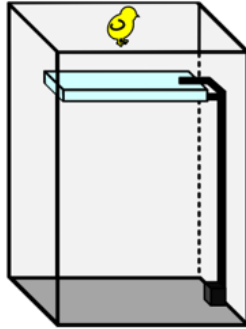
Step 1

- Stationary plate
- Chick is supported



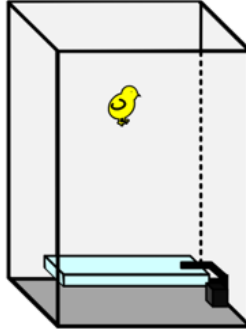
Step 2

- Moving plate
- Chick is not supported (in free fall)



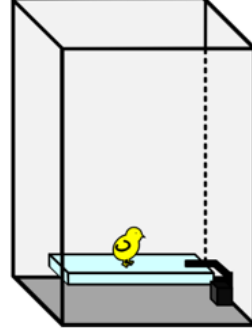
Step 3

- Stationary plate
- Chick is not supported (still in free fall)



Step 4

- Stationary plate
- Chick is supported



In Step 1, the plate is at most a movable platform that supports the chick. *Id.* But the claims do not recite a “movable platform to support an unrestrained chick”; they recite a “moving platform to support an unrestrained chick.” This distinction matters greatly, particularly in industrial chick hatching and sorting operations, where a high rate of throughput—achieved by *moving* the chicks quickly down the sorting/routing line—is critical. *Id.*, ¶41.

At Step 2, the movable plate is accelerated downward out from under the chick at a rate faster than the acceleration of free fall, such that the chick enters free fall. *Id.*, ¶42. That is, the system is specifically designed such that as soon as the plate becomes a “moving” plate, it does not support the chick—the chick is in free fall any time the plate is moving. *Id.* At Step 3, the plate stops and becomes stationary again as the chick continues its unsupported free

fall. *Id.*, ¶43. At Step 4, the chick lands on the plate, which is stationary, and is then supported by the plate. *Id.*, ¶44.

Thus, the only time the Gershman plate is a *moving* platform (Step 2), it does not support the chick. *Id.*, ¶45. And, the only time the Gershman platform supports the chick is when it is *not* a moving platform but rather a stationary platform (Steps 1 & 3-4). *Id.* Thus, Gershman does not meet the limitations of a moving platform to support an unrestrained chick. *Id.*, ¶¶46-48.

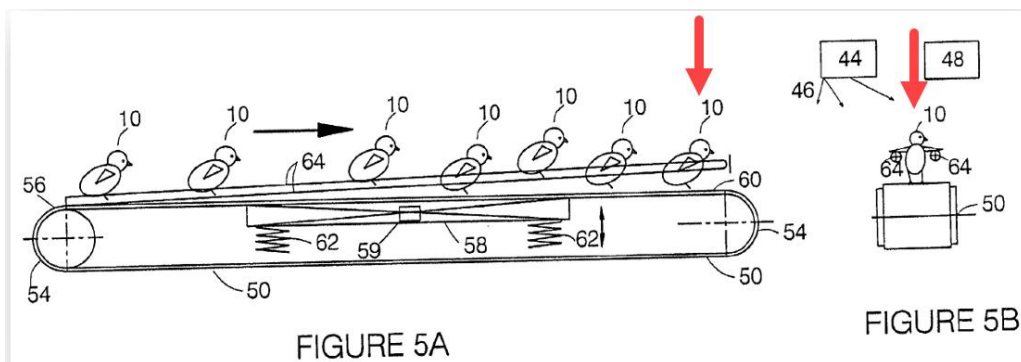
Pierre (Ex. 1004): Petitioner relies on Pierre, for all grounds, as disclosing, or rendering obvious, the claimed “database of images” of chick features required by all independent claims. But, Pierre does not disclose **any database at all**—much less one with the required images of “male and female wing patterns” (Claim 1), “healthy and unhealthy chicks of the same breed” (Claim 6), or “predetermined feature of a chick” (Claim 9). *Id.*, ¶49. Instead, all Pierre discloses is comparing an image of a chick to a single reference image (not a database of images). *Id.*, ¶¶49-50. That does not meet the claim language requiring comparing an image to a database of images. *Id.*

Yavnai (Ex. 1005): Petitioner relies on Yavnai, for grounds 2 & 8, as disclosing the limitations of “a moving platform to support **an unrestrained chick**” with “an image capture device to capture at least one image of **the**

chick.” But, Yavnai is exactly the type of problematic prior art system the ’124 patent surpassed and innovated beyond: Yavnai is a system that restrains the chick. Ex. 2002, ¶¶51-52. Yavnai requires poles to restrict the chick’s movement and put it into a specific position to capture an image. *Id.*, ¶53.

Petitioner’s arguments to the contrary ignore that—critically for these limitations—the antecedent basis for “the chick” imaged is “an **unrestrained** chick.” *Id.*, ¶51. These limitations are not met by the Yavnai system, where the chick is **restrained** at the time of imaging. *Id.*, ¶¶51-53.

This restraint is clear from the below figure of Yavnai’s moving platform. *Id.*, ¶53. When the chick is imaged (60) (shown by the red arrows), it is indisputably restrained by the poles (64) to keep it in exactly the position needed to take its picture (shown in Figure 5B). *Id.*



Ex. 1005, Figs. 5A-5B. In fact, the chick is restrained in *two* ways: *First*, its body is restrained from lateral movement by the poles (64) over the entire length of the conveyor, starting with the poles being adjacent to the chick’s

legs and feet and through to when the chick is imaged (Ex. 2002, ¶54), and, *second*, the chick’s wings are restrained by the poles to keep them open (*id.*, ¶55). The poles are positioned narrowly enough to one another that they start restraining the chick laterally as soon as the chick gets on the platform, and over the whole length. *Id.*, ¶55. At the time the chick is imaged, they both restrain it laterally and restrain its wings from closing. *Id.*, ¶¶54-55.

B. The POSITA Would Not Have a Motivation to Combine or Reasonable Expectation of Success

The second independent reason Petitioner’s obviousness arguments fail is that it has not shown—and cannot show—any motivation to combine its proffered references, nor an RES. *Id.*, ¶56. The Petition relies heavily on arguments about what a POSITA would allegedly do to modify prior art, understand from such prior art, and find obvious from the prior art—yet the Petitioner submitted *no expert analysis whatsoever*. *Id.*

Further failing to meet their burden, the Petition does not even *mention* the word “motivation” much less proffer any expert evidence for why a POSITA would have a motivation to make the sundry combinations it asserts. *See Icon Health & Fitness, Inc. v. Strava, Inc.*, 849 F.3d 1034, 1043 (Fed. Cir. 2017) (“Attorney argument is not evidence”); *see also id.*, ¶56. Moreover, for every ground, Petitioner simply states in the most conclusory manner possible that its combinations would have been obvious. *See, e.g.*, Pet., 24 (“[i]t 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 ... with a reasonable expectation of success”); *see also id.*, 28, 29, 31-44, 46, 49-55, 59-62, 64; Ex. 2002, ¶56. Such arguments do not pass muster under Federal Circuit precedent. *See, e.g., TQ Delta, LLC v. CISCO Systems, Inc.*, 942 F.3d 1352, 1358-63 (Fed. Cir. 2019) (instructing “[r]ejections on obviousness grounds, in particular, cannot be sustained by mere conclusory statements”).

Petitioner’s obviousness arguments fail at the gate because they do not address the challenges and realities of industrial poultry processing. Ex. 2002, ¶57. For example, and as PO’s expert Dr. Keener explains in detail, the POSITA would not have a motivation to modify the experimental, manually movable plate of Gershman to integrate it into Pierre’s industrial poultry processing system (or any other industrial system). *Id.* Pierre repeatedly states that its system is for use in “industrial breeding” centers. *Id.*; Ex. 1004 at Abstract, 4, 5. The POSITA would know that industrial breeding centers process chicks at an astoundingly high rate. *See, e.g.,* Ex. 1006, 3:1-11 (automated operations achieving up to twelve chicks per second). Quick, humane movement of chicks is critical and **bottlenecks are unacceptable**. Ex. 2002, ¶57.

In contrast to a system suitable for industry, Gershman discloses an experiment where a person puts a single chick on a stationary plate one at a time. *Id.*, ¶58. Installing such a plate in an industrial system would create a bottleneck that a POSITA would dismiss out of hand as not viable. *Id.* In such a system, there would be a massive backlog as chicks await their turn on the chick-dropping platform, which can accommodate only one chick at a time. *Id.* The backlog would be unacceptable in an industrial system (like Pierre), and thus there would be no motivation to combine Gershman and Pierre. *Id.*

Moreover, the POSITA reading Gershman would immediately grasp myriad other problems with attempting to add it to an industrial system. *Id.*, ¶59. For example, there would be a huge problem with trying to figure out how to ensure one, and only one, chick is loaded on the plate in Step 1. *Id.* There would be the further problem of how to ensure (in Step 2) that chicks do not fall down the drop shaft as they wait. *Id.* If an opening/closing door is used, it would only create the further problem of how to ensure the fragile chicks are not injured when the door closes, potentially on the chick. *Id.*

There is the still further problem of chick droppings building up on the platform. *Id.*, ¶60. Droppings would be a major problem for Gershman because its system requires a clean, transparent plate to capture an image of

the chick from above. *Id.* Gershman does not even acknowledge these problems much less provide a solution to them, showing that Gershman is limited to only the simple laboratory set up used by the author. *Id.*

Petitioner also fails to show there would have been a motivation and RES in combining Yavnai with Pierre. *Id.*, ¶61. The POSITA would not be motivated to use Yavnai because it requires highly restraining the chick to take an image, which drastically increases the chances of injuring the chick. *Id.* Thus the POSITA would not be motivated to use Yavnai at all, much less combine it with a system like Pierre that would not solve this problem. *Id.*

For these reasons and the additional ones discussed below, the Board should not find any of the claims unpatentable. *Id.*, ¶62.

II. PETITIONER HAS FAILED TO MEET ITS BURDEN BY FAILING TO PRESENT ANY EVIDENCE OF HOW THE POSITA WOULD HAVE UNDERSTOOD THE PRIOR ART

Before turning to the merits, PO notes that Petitioner has entirely failed at the gate to meet *its burden* to show invalidity because it presented no evidence of what a POSITA would understand about the prior art. The Petition relies entirely on obviousness arguments, making claims about what a POSITA would understand from the prior art references, that a POSITA would have found any gaps in the prior art references obvious to fill, how a POSITA would have combined several references, and how a POSITA would

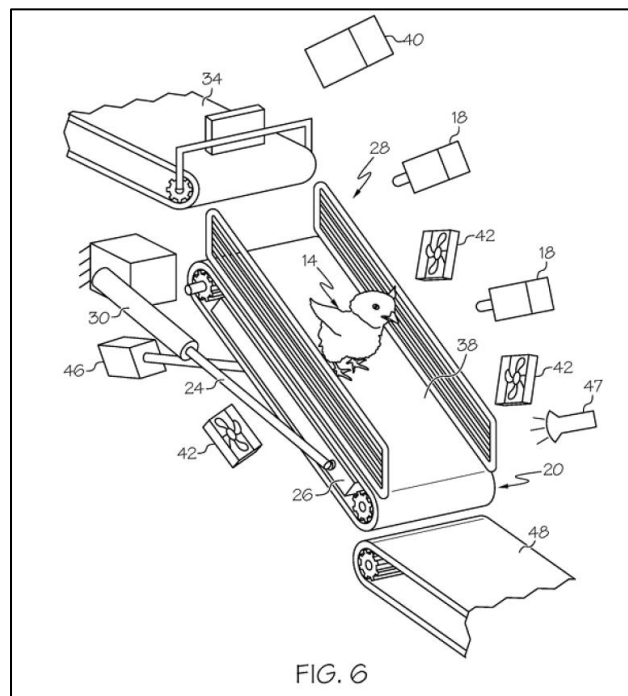
have had an RES in doing so. Pet. *e.g.*, at 23-24; Ex. 2002, ¶56. Yet ***the petition is unsupported by any expert evidence and relies only on conclusory attorney argument.*** Petitioner provided no ***evidence*** of how a POSITA would have understood the references. Ex. 2002, ¶56. Accordingly, Petitioner has failed to meet its burden of proof.

Moreover, Petitioner cannot belatedly cure this failure of proof. It is improper for a reply to present new evidence, including new expert testimony, that could have been presented in a prior filing. 37 C.F.R. § 42.23; PTAB TPG at 74. A reply that raises a new issue or belatedly presents evidence may not be considered under the Board's rules. New evidence necessary to make out a prima facie case of invalidity, such as newly raised rationale to combine the prior art references that was not expressed in the petition is a new issue. *See Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369–70 (Fed. Cir. 2016) (holding that the Board did not err in refusing the reply brief as improper under 37 C.F.R. § 42.23(b) because petitioner relied on an entirely new rationale to explain why one of skill in the art would have combined the references at issue), *see also* PTAB TPG at 74. For these reasons, Petitioner's failure of proof is fatal to its petition.

III. OVERVIEW OF THE '124 PATENT

The '124 patent relates to systems for quickly and efficiently inspecting day-old chicks to determine, in one embodiment, their gender and/or health. *See, e.g.*, Ex. 1001, 2:20-67, *see also* Ex. 2002, ¶63. The system uses a series of moving platforms (*e.g.*, conveyor belts) that support an unrestrained chick as it is brought through a process of being stimulated to cause its wings to open and be imaged for purposes of determining its sex and/or health. *See* Ex. 1001, 2:27-3:16, Ex. 2002, ¶63. The '124 patent system makes humane, high-throughput poultry processing possible. Ex. 2002, ¶63; *see also* Ex. 2003, ¶¶32-34.

Figure 6 illustrates an embodiment showing that the chick is supported by a moving platform (38) as it is stimulated and imaged:



Ex. 1001, Fig. 6; Ex. 2002, ¶64. Nowhere does the '124 patent contemplate a process where the chick is *unsupported* by the moving platform as it is stimulated and/or imaged. Ex. 2002, ¶65.

The '124 patent invention solved several major problems in the poultry industry. Each relates to speed, accuracy, and/or safety with sorting young chicks. See Ex. 1001, 1:14-3:16; Ex. 2002, ¶66. If the sorting process is too slow, requires too much manual handling, makes too many errors, or results in injury to the chicks, the efficiency and success of the system will be compromised. See Ex. 1001, 1:30-36, 1:60-2:5, 2:8-11, 2:16-20; Ex. 2002, ¶66. Prior to the '124 patent inventions, there was no system that addressed all of these problems and met all of these needs. Ex. 2002, ¶66.

The '124 patent claims a unique solution to these problems that combines features to enable, in one embodiment, the rapid and accurate determination of a chick's gender. *Id.*, ¶68. Independent claim 6 focuses on the "health" of the chick rather than its gender, and claim 9 focuses on whether the chick has a "predetermined feature." In all claims the "moving platform" supports and keeps the chicks moving through the processing facility, unrestrained, without stopping for manual inspections that can both slow down processing and increase mortality rates due to injuries caused by handling. *Id.*, ¶68. Baby chicks are fragile. *Id.* Both manual handling and

restraint systems are inimical to the health of baby chicks and POSITAs have long understood the need to innovate beyond such systems. *Id.*

Importantly, the “moving platform” is designed to support an “unrestrained chick,” reducing the risk of injury that may occur by restraining a chick. *See, e.g.,* Ex. 1001, 6:55-56, 7:19-20, 42-43; Ex. 2002, ¶69. Similarly, the “stimuli” can be imposed upon, and the “image” captured of, this same “unrestrained chick.” *See id.* Proceeding through the sexing/inspection process “unrestrained”, the chick is not physically manipulated in a manner that increases the likelihood of injury. *See id.*

Moreover, the “stimuli” and “image” capture and processing occur while chicks are supported on the “moving platform,” and thus moved in a controlled manner. *See* Ex. 2002, ¶70. That is, sexing, health inspection, and/or analysis of a predetermined feature can occur while chicks are being transported on, e.g., a conveyor belt to sort chicks, and sorting/removal can be informed by the outcome of the inspection process. *See id.*, ¶70.

Thus, the ’124 patent achieves a solution that (i) emphasizes speed of processing, (ii) avoids harmful manual inspection and restraint, (iii) reduces the likelihood of causing injury, and (iv) provides the accuracy needed to avoid mis-sorting chicks on the basis of an incorrect assessment of sex and/or health status. *See* Ex. 1001, 1:14-3:16; Ex. 2002, ¶71.

IV. OVERVIEW OF CERTAIN CITED ART

The Petition relies on combinations of five references to challenge all claims of the '124 patent. Each reference suffers from at least one of the problems that the '124 patent solved, and none of the proffered combinations disclose all limitations of the claims. Petitioner asserts the following grounds:

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

A. Gershman (Ex. 1003)

Gershman describes experiments using a rudimentary manual drop plate and photography set up to perform sexing. Ex. 2002, ¶¶88-89. Gershman looks at differences in plumage sprouts as a distinguishing feature between male and female chicks within the first days after hatching. *Id.*, ¶¶88-91, Ex. 1003, 1, 3, 5. Gershman describes taking a picture of a chick with its wings open and using that to determine gender. *See, e.g.*, Ex. 1003, 3; Ex. 2002, ¶90; *see also* Ex. 2003, ¶37.

To cause a chick to open its wings for imaging, Gershman proposes to put the chick into free-fall—entirely unsupported—so that an image can be

taken of the chick in free-fall with wings open. Ex. 2002, ¶92. To do that, Gershman places a chick on a plate and then accelerates the plate “down more speedy than the acceleration of free fall (g)” such that the chick’s “legs should lose support faster than they can move down.” Ex. 1003, 3; Ex. 2002, ¶92. The plate is at least partially transparent and illuminated by a white light from below, as depicted in Figure 3 below.



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

Ex. 1003, 3; Ex. 2002, ¶92.

While the chick is in free-fall, Gershman proposes to “take pictures of chicks with open wings by simple cheap digital camera with white backlight.” Ex. 1003, 2-3; Ex. 2002, ¶93. Pictures are taken from above the chick, which is illuminated from beneath it. See e.g., Ex. 1003, Fig. 5; Ex. 2002, ¶¶93-94. Thus, the plate must be clean enough to permit illumination, so as not to corrupt the background of the image and disrupt image processing. Ex. 2002, ¶¶93-94.

B. Pierre (Ex. 1004)

Like Gershman, Pierre provides an incomplete description of a system for the examination of bird plumage to identify characteristics of the bird, including sex. Ex. 2002, ¶¶95-97. In Pierre, each chick is placed “one at a time” into a situation where it is free-falling such that it will open its wings. Ex. 1004, 4; Ex. 2002, ¶95. Pierre does not disclose any mechanism for how the chick would be made to free-fall. During the free-fall, a camera takes one or more pictures of the chick’s wings, one of which will be compared to a single “reference image.” Ex. 1004, 4 (“comparison with [[a]/[the]] reference image”), 5 (same), 6 (same), 7 (same), 8 (same), 9 (same); Ex. 2002, ¶¶95-97; *see also* Ex. 2003, ¶¶38-40.

C. Yavnai (Ex. 1005)

Yavnai includes a brief disclosure referring to various systems for inducing a chick’s wings to spread by physically forcing them to open, restraining the wings in that position, and then taking an image of the wings only once they are restrained. Ex. 1005, *passim*; Ex. 2002, ¶98; *see also* Ex. 2003, ¶37.

In the embodiment Petitioner focuses on, the chicks are placed on a flat conveyor belt with poles on the sides that slope upwards along the conveyor. Ex. 2002, ¶99.

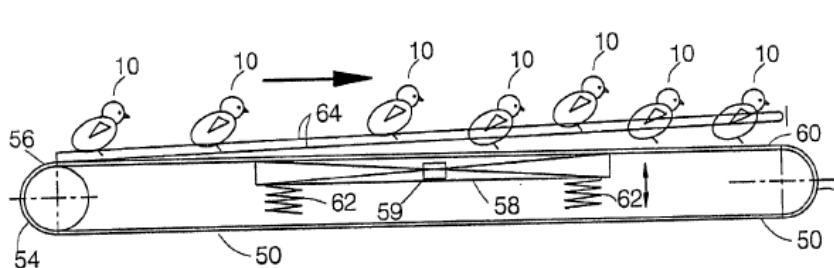


FIGURE 5A

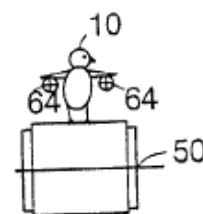


FIGURE 5B

Ex. 1005, Figs. 5A-5B.

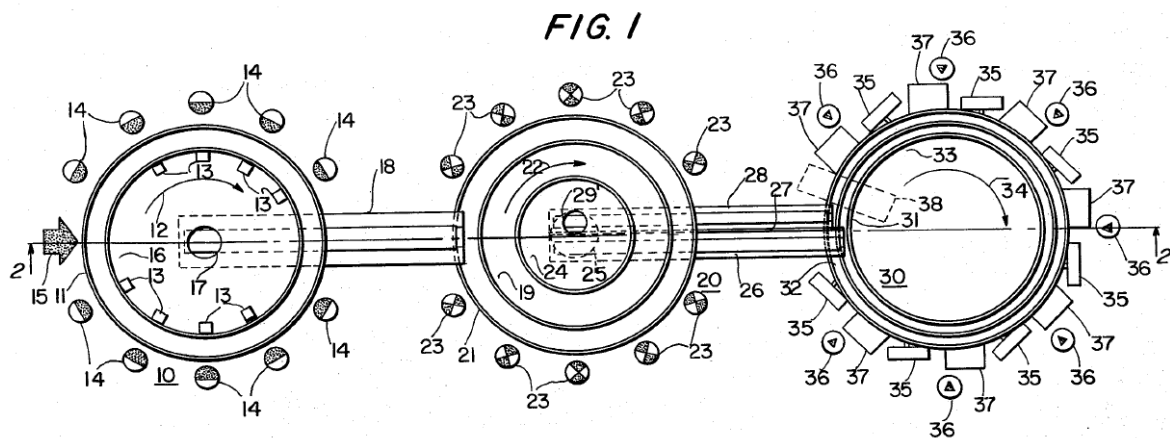
When the chick is placed on the conveyor belt, the poles immediately restrict the chick's feet and legs laterally, thereby restraining the chick's movement so that the chick remains in alignment for the angled poles to restrain the chick's wings. Ex. 2002, ¶99. The conveyor has a vibrating mechanism that causes the chicks to jump up and spread their wings. See Ex. 1005, [0042], Figs. 5A-5B; Ex. 2002, ¶99. At the point where the chicks spread their wings, Yavnai's intent is that the poles will prevent the wings from closing, and then progressively force the chick's wings into a further extended position as the chick proceeds down the conveyor. Ex. 2002, ¶99. As shown above, Figure 5A shows the conveyor and angled poles and Figure 5B shows the position where the poles force the wings into a fully open position. Ex. 2002, ¶99.

Because the chicks are highly restrained by poles and their wings must be manipulated in order for the Yavnai system to work, the risk of injury to

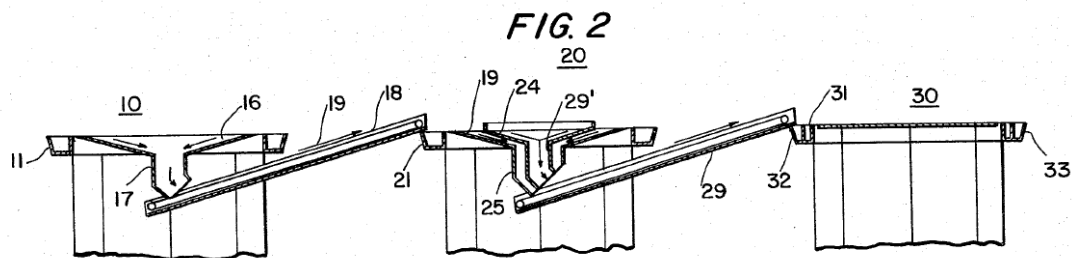
the chicks is greatly increased as the chick is moved forward against the poles and held in place. *Id.*, ¶¶100-101.

D. Goodwin (Ex. 1007)

Goodwin discloses a conveyor system that takes a chick through various stations where manual inspections or other operations take place. Ex. 1007, 1:48-52, 2:18-33; Ex. 2002, ¶102; *see also* Ex. 2003, ¶37. The first station is a debeaking station, the second is a vaccination station, and the third is a sexing station. *Id.*, 1:48-52; Ex. 2002, ¶102. For the sexing station, the chicks are dropped onto an annular conveyor trough, and the annular conveyor rotates the chicks past various points where human sexing operators are stationed. Ex. 1007, 2:18-33. The sexing operator removes the chick from the trough and determines the sex of the chick through known manual inspection techniques. Ex. 2002, ¶102.



Id., Fig. 1.



Id., Fig. 2.

E. Tao (Ex. 1006)

Tao discloses the use of UV lighting instead of regular lighting when imaging chick wings for sexing. See Ex. 1006, Abstract, 2:37-51; Ex. 2002, ¶103; see also Ex. 2003, ¶37. The main idea in Tao is that by applying UV lighting instead of regular lighting, distinguishing between down and feather structures can be more effectively accomplished due to “strong signal ratio between feather and down” which made it “much easier for the consequent image processing without sophisticated noise removing process . . .” See Ex. 1006., 2:37-51; Ex. 2002, ¶103. Notably, Tao observed that a typical hatching operation in 1999 would produce roughly 250,000 – 500,000 baby chicks a day that need to be sexed and sorted as quickly as possible. Given industrial requirements, Tao recognized the need for sexing and sorting systems to provide “higher throughput,” “labor savings and cost benefits” and “fewer human errors.” See *id.*, 1:57-2:17; see also Ex. 2002, ¶103.

V. PERSON OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art relevant to the '124 patent at the time of the invention (“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. More formal education may substitute for less work or research experience, and vice versa. Ex. 2002, ¶¶104-109; Ex. 2003, ¶¶32-34.

PO’s description of the level of ordinary skill in the art is higher than that of the Petitioner. See Pet., 15-16. The arguments presented in this brief, and the expert opinions that support them, apply with equal force under either proffered level of skill. *Id.*, ¶109; Ex. 2002, ¶¶4-16; Ex. 2003, ¶¶2-14, 32-34.

VI. CLAIM CONSTRUCTION

In an *inter partes* review, claim terms receive their plain and ordinary meaning in light of the specification of the patent in which they appear, the same standard as used in district court. 37 C.F.R. § 42.100(b); see *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005). Petitioner states that “no constructions are necessary.” Pet., 16. PO agrees that no claim terms presently require construction and can be given their plain and ordinary meaning (“POM”). Ex. 2002, ¶¶110-111. However, the parties appear to

have a dispute regarding the plain meaning of a few terms, discussed below. Ex. 2002, ¶112. PO notes that its validity arguments apply under either of the parties' proposed constructions. *Id*; see also Ex. 2003, ¶¶35-36.

A. “moving platform to support an unrestrained chick” (Claims 1 & 9) and “moving platform upon which an unrestrained chick is supported” (Claim 6)

Claims 1 and 9 include the limitation “moving platform to support an unrestrained chick” and Claim 6 includes the limitation “moving platform upon which an unrestrained chick is supported.” These limitations recite what the claimed moving platform must do: support an unrestrained chick. Ex. 2002, ¶113. PO submits their POM is: “a platform in motion supporting an unrestrained chick as it transports the chick from a first location to a second location.” *Id*.

In the Petition, Petitioner seeks to focus solely on the term “moving platform” in isolation, divorced from the larger phrase in which the term appears. *Id.*, ¶114. Specifically, Petitioner argues that the POM of “moving platform” is “a platform that transports a chick from a first location to a second location.” Pet., 16. Petitioner’s construction ignores the full context of the claim language—the moving platform does not just transport a chick from a first location to a second; the “moving” platform must also *support* the unrestrained chick while it is moving. Ex. 2002, ¶¶114-115.

Claim construction begins, as always, with the express language of the claims and they are the most important source of intrinsic evidence. *See Tate Access Floors, Inc. v. Interface Architectural Resources, Inc.*, 279 F.3d 1357, 1370 (Fed. Cir. 2002) (“Claim interpretation begins, as always, with the language of the claims.”); *Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335, 1344 (Fed. Cir. 1998) (“The actual words of the claim are the controlling focus.”). Here, the claim terms “moving platform to support an unrestrained chick” and “moving platform upon which an unrestrained chick is supported” must incorporate the express requirement of supporting the chick while the platform is in motion. Ex. 2002, ¶¶114-115. PO submits their POM is: “a platform in motion supporting an unrestrained chick as it transports the chick from a first location to a second location.” *Id.*

B. “moving platform” (Claims 1, 6 & 9)

As discussed above, PO submits that “moving platform” should not be understood in isolation but rather in the full context of the phrases in which it appears. *Id.*, ¶¶116-118. Nonetheless, even if it is construed in isolation, Petitioner’s purported POM of “a platform that transports a chick from a first location to a second location” is incorrect at least because it does not include the express requirement of “moving.” *Id.*, ¶116. A “moving platform” is, quite simply, a “platform that is *in motion*.” *Id.* The patentee did not recite a

“movable platform.” *Id.* It instead specifically chose to use the word “moving.” *Id.* It is an active term, not a passive one as Petitioner seeks to make it. *Id.*

That the “moving platform” is *in motion* is supported by the specification, which depicts and describes a system where the moving platform (e.g., a conveyor belt) is in *motion* supporting and transporting the chick through the system:

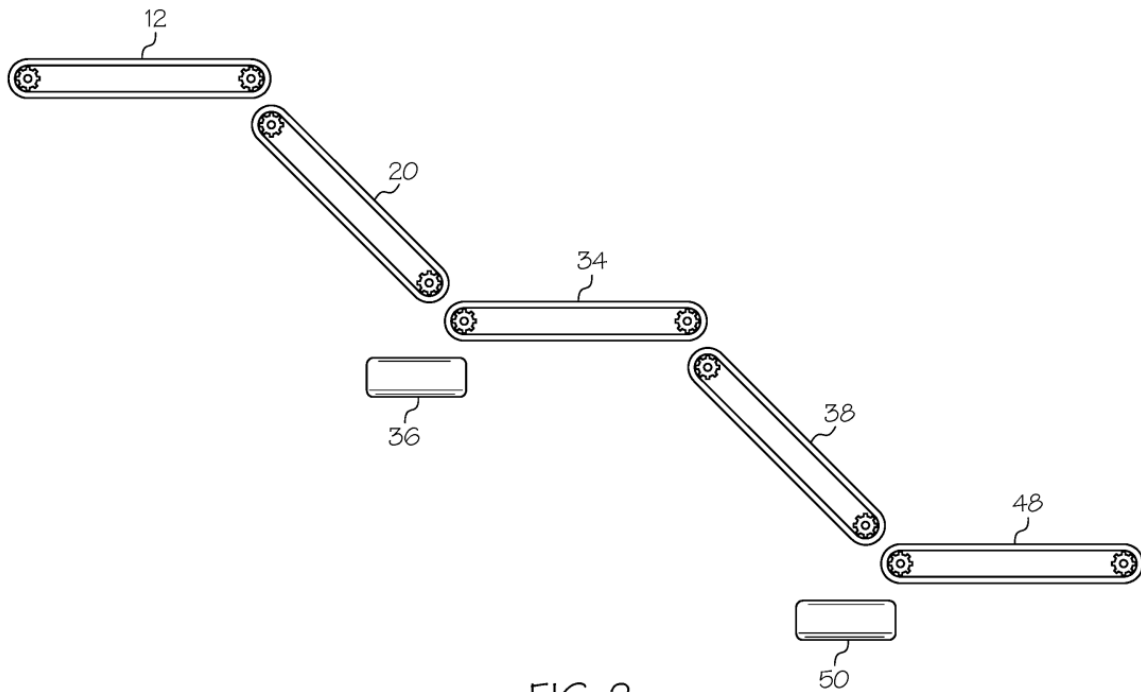


FIG. 2

Ex. 1001, Fig. 2; *see also* Ex. 2002, ¶117.

PO’s construction clarifies the common-sense fact that a *stationary* platform, or movable platform, is not a *moving* platform. Ex. 2002, ¶118. Petitioner’s construction in contrast would incorrectly broaden the term

“moving platform” to include platforms that can be stationary so long as they are “movable” at some point in the process. *Id.* For example, if a chick is imaged while sitting on a stationary, but capable of moving, plate, Petitioner would contend the chick is having its image taken on a moving platform. *Id.* Petitioner’s broadening of the term is not supported by the express claim language (which recites the active verb “moving” not the broader term “movable”), nor the specification where no stationary platform embodiment is disclosed as even an example. *Id.*

C. “unrestrained chick” (Claims 1, 6, 9)

In the claimed system, an “unrestrained” chick is supported by the moving platform. *Id.*, ¶¶119-121. An unrestrained chick is illustrated in the below figure from the ’124 patent:

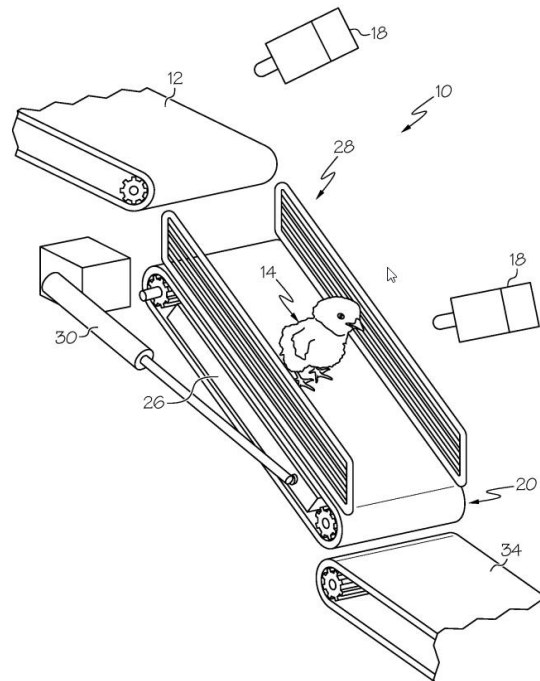


FIG. 3

Ex. 1001, Fig.3; Ex. 2002, ¶119.

As can be seen in this embodiment, no part of the chick is being restricted from its natural movement—laterally, forward or backward, up or down, or rotationally. See Ex. 2002, ¶¶119-120. The chick is free to move as it naturally can while on the moving platform. *Id.*

Petitioner argues that “unrestrained chick” means a chick that can “freely move its wings while on the moving platform.” Pet., 19. But, this definition improperly requires only the *wings* be free to move, ignoring the rest of the chick’s body. Ex. 2002, ¶121. For example, a chick could have its feet locked down in place by iron cuffs on the platform yet still be “unrestrained” under Petitioner’s construction because its wings can move.

This is wrong because the claims do not recite a “chick with unrestrained wings”—they recite an “unrestrained chick.” *Id.* And the specification discloses a chick whose whole body, not just its wings, is free to move on the moving platform. *See, e.g.*, Ex. 1001, Figs. 1, 3, 6.; Ex. 2002, ¶121.

VII. ARGUMENT

Petitioner’s obviousness arguments fail for two main, independent reasons: *First*, none of the proffered combinations disclose all limitations of the independent claims, as required to make a prima facie case of obviousness. *See, e.g., University of Strathclyde v. Clear-Vu Lighting LLC*, 17 F.4th 155, 160-62 (Fed. Cir. 2021) (reversing Board’s obviousness decision in an IPR because the prior art did not teach or suggest all of the claim limitations and thus “no reasonable fact finder could have found that the combination of [reference 1] and [reference 2] discloses [limitation]”); *Funai Elec. Co. v. Daewoo Elecs. Corp.*, No. C 04-01830, 2006 U.S. Dist. LEXIS 93132, at *17 (N.D. Cal. Dec. 20, 2006); Ex. 2002, ¶122; Ex. 2003, ¶¶3-5. *Second*, a POSITA would not have been motivated to make the combinations presented, nor had an RES in doing so. Ex. 2002, ¶122; Ex. 2003, ¶¶3-5.

A. The Proffered Combinations of Prior Art Fail to Disclose All Limitations of the Independent Claims

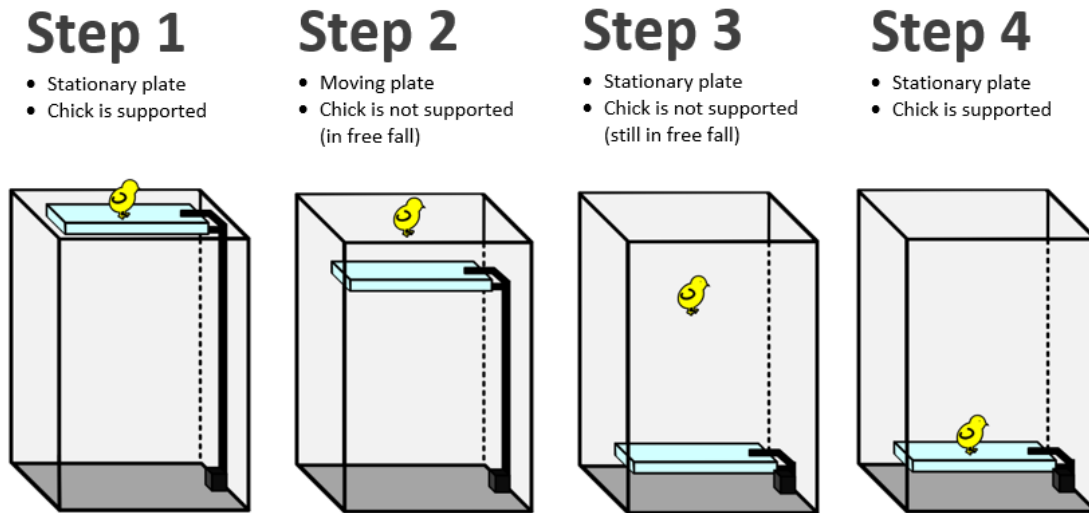
1. Gershman (Grounds 1, 4, 6-7)

Grounds 1, 4, 6-7 all rely on Gershman as allegedly disclosing the limitations “a *moving platform to support* an unrestrained chick” (Claim 1 & 9) and “a *moving platform* upon which an unrestrained chick *is supported*” (Claim 6), but Gershman does not. Ex. 2002, ¶123. It is undisputed that none of the other references Petitioner attempts to combine with Gershman (Pierre for Grounds 1 and 4; and Pierre and Tao for Grounds 6-7) disclose this limitation. *Id.* Thus, because Gershman fails to disclose the moving platform limitation, all of Petitioner’s obviousness arguments for Grounds 1, 4, and 6-7 fail because the proffered combination does not include all elements of the claims challenged in these Grounds. *Id.*

i. Gershman Does Not Disclose the “moving platform to support an unrestrained chick” Limitations of Independent Claims 1 & 9 or “moving platform upon which an unrestrained chick is supported” Limitation of Independent Claim 6

As claimed, the platform *supports* the chick when the platform is in *motion* (i.e., moving). But the Gershman drop plate is the opposite of “a moving platform to support an unrestrained chick”—it is instead a plate specifically designed *not to support* the chick while the plate is moving. *Id.*, ¶124.

In Gershman, the chick is initially supported by a movable plate that is entirely stationary, as illustrated in the below demonstrative. Ex. 1003, 3; Ex. 2002, ¶125.



That plate then is set in motion and drops out from under the chick so quickly that the chick falls (*i.e.*, is not supported) (Steps 2-3). See Ex. 1003, 2-3; Ex. 2002, ¶125. The chick then lands on and is supported by the plate at the very bottom of the drop shaft (Step 4), but only when the plate is entirely stationary again. See *id.* Thus, at the only time the movable plate in Gershman could ever be considered to be a “moving” plate, it is specifically designed **to not support** the chick. Ex. 2002, ¶125. Conversely, the only time Gershman’s movable plate supports the chick is when it is not a moving platform at all, but rather an entirely stationary plate. *Id.* In Gershman, there is no platform that is both “moving” and providing “support” to the unrestrained chick as

required by the claims. Thus, there is no “moving platform to support an unrestrained chick.” *Id.*, ¶125.

Gershman’s teaching of an unsupported chick during the plate’s movement is critical to its operation. *Id.*, ¶126. Gershman teaches to take an image of the chick in free-fall with the wings open. *Id.* Gershman accomplishes this by placing the chick in unsupported free-fall. *Id.*

As the POSITA would have understood, this is a critically important distinction that cuts counter to one of the key benefits of the ’124 patent system. *Id.*, ¶127. Ensuring chicks are *supported* on a *moving* platform through the sexing and evaluation allows for a fast, efficient, and controlled process. *Id.* This avoids the bottlenecks that would present in systems that are not based on a “moving” platform but rather rely on stationary plates. *Id.*

Notably, the claims do not say that the platform is merely “movable”. The claim language instead says that the platform is in fact “moving” and also providing “support” to an “unrestrained chick.” Ex. 1001, 6:55-56; Ex. 2002, ¶128. Such a “moving” platform in the form of a conveyor belt is shown clearly in Figure 3 of the ’124 patent, shown above in section VI.C. Ex. 2002, ¶128.

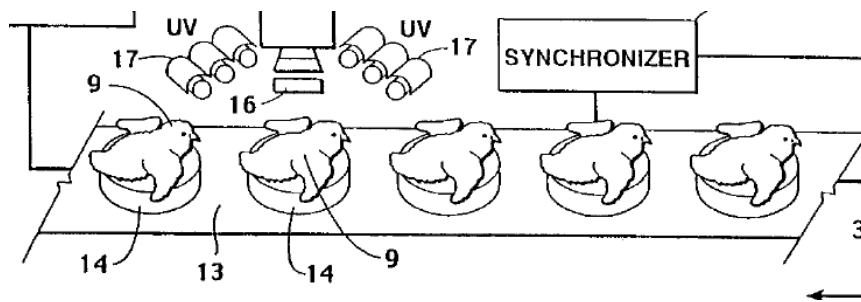
To the extent the ID viewed this limitation to require only that the platform be “movable” at some point during operation, and independently to

require that it “support” the chick at some point during operation, PO respectfully submits that this interpretation does not reflect a POSITA’s understanding. Ex. 2002, ¶128. The plain language of the claim requires that the platform be actually “moving” while providing “support” to an unrestrained chick—not just be “movable” at any point during operation, untethered to when the plate provides “support” to the chick. Ex. 1001, 6:55-56; Ex. 2002, ¶128.

Moreover, Gershman does not meet this limitation for a second reason. Ex. 2002, ¶129. Both parties’ proposed plain meanings for the term “moving platform” include a requirement that it “transports the chick from a first location to a second location,” but Gershman’s platform does not do so. *Id.* Rather, it is the *removal* of the plate and gravity that transport the chick from a first location to a second location in Gershman. *Id.* As an analogy, consider a baseball held up by a person in his or her hand at the shoulder level. *Id.* If the person pulls his or her hand out from under the ball and catches the ball at the hip level, one would not consider the hand to have “transported” the ball from the first location to the second location—rather it was the removal of the hand and gravity that transported the ball. *Id.* So too with Gershman’s platform. It does not transport the chick, gravity does the transporting once the plate is removed from beneath it. *Id.*

ii. The Prosecution History Confirms Gershman Does Not Disclose the “moving platform to support an unrestrained chick” Limitations

During prosecution, the Examiner extensively cited and discussed Gershman. Ex. 1002, 129-130, 220-221, 226-228, 562, 565. Yet the Examiner never contended that Gershman’s drop plate could be a “moving platform to support an unrestrained chick.” See *id*; Ex. 2002, ¶131. The Examiner instead appears to have assumed and adopted PO’s plain meaning understanding of this term insofar as the platform must be both “in motion” and “supporting” the chick because he consistently cited only the Tao reference as disclosing the moving platform to support a chick. *Id*. In Tao, as can be seen below, the chicks are indeed in motion and supported through the process (though they are restrained):



Ex. 1006, Fig. 1; see also Ex. 2002, ¶131.

The Board faulted the Examiner for “never discuss[ing] that Gershman also teaches a moving platform supporting an unrestrained chick”—but this is unwarranted criticism because Gershman does *not* disclose this limitation

under the POM of the term that the Examiner, like PO, appears to have used in allowing the claims over Gershman and Pierre. ID, 11-12; *see also* Ex. 2002, ¶132.

iii. Response to ID Regarding Gershman

At the institution phase, the Board found that Gershman disclosed “a moving platform to support an unrestrained chick of a particular breed” based on an erroneous understanding of Gershman’s figures 3, 5, and 6. ID, 17. Specifically, the Board noted that “Gershman Figures 3, 5, and 6 show a chick supported on a ‘moving plate’ and moving from a first location to a second location via a mechanical activator as argued by Petitioner.” *Id.* But this is contrary to Gershman’s teachings. Ex. 2002, ¶¶133-142. In none of those figures is the chick supported on a plate that is actually moving. *Id.* ¶133.

Figure 3 shows a hand holding a stationary plate, not a moving plate, that is supporting the chick:

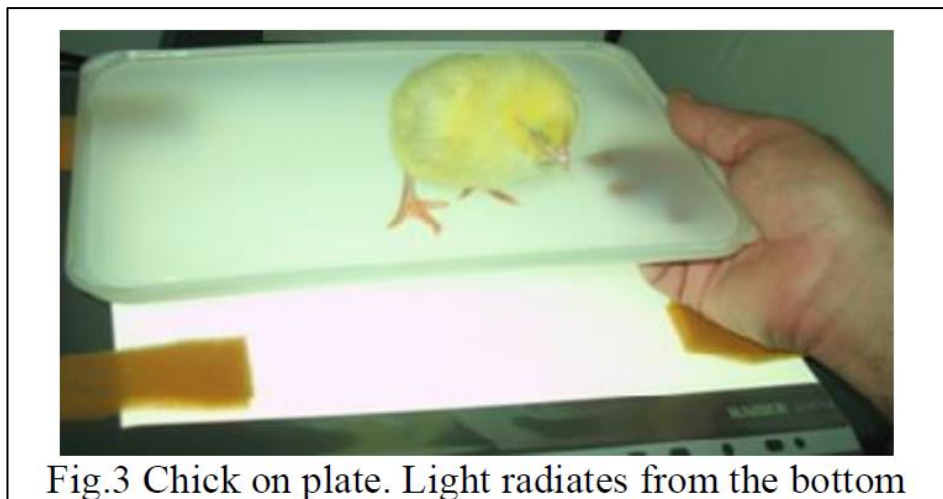


Fig.3 Chick on plate. Light radiates from the bottom

Ex. 1003, Fig. 3; Ex. 2002, ¶134.

This photo does not even show the operative system in its entirety. The objective of the photo is to convey to a POSITA that a light radiates from the bottom up through the plate and simultaneously provides a “white” backdrop against which a black and white photo would be preferably taken from above the chick. Ex. 1003, 3, 5; Ex. 2002, ¶135.

Figures 5 and 6 of Gershman show more of the system (though still not a complete system), illustrating the mechanical actuator (or perhaps just a simple support) to the right of the chick:



Fig. 5. Falling female chick

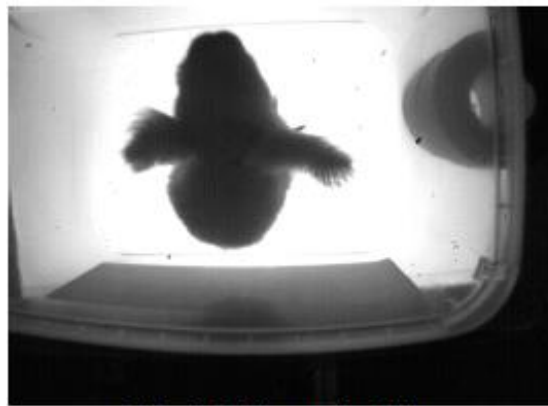


Fig. 6. Falling male chick

Ex. 1003, Figs. 5, 6; Ex. 2002, ¶136.

Notably, both Figures 5 and 6 are photos taken from a top view that show the wings open ***while the chick is unsupported***. Ex. 1003, Figs. 5, 6; Ex. 2002, ¶137. Indeed, the figures are labelled “Falling female chick” and “Falling male chick.” The images do not show a moving plate providing any

support to the chick at all when in motion. Ex. 2002, ¶137. The chicks are in free-fall as indicated by their labels (“Falling”) and the written description confirms the plate *intentionally* does not provide any support while moving. See Ex. 1003, 3, 5, 10; Ex. 2002, ¶137. The disclosure states that when the wings are open, the plate is moving downward at a rate that is faster than gravitational acceleration. See *id.* It specifically states that it is “falling with acceleration more than **g**,” and that the plate moves “down more speedy than the acceleration of free fall (**g**).” Ex. 1003, 3, 10 (emphasis in original); Ex. 2002, ¶137.

If the plate is moved downward at a rate that is more than the rate of gravitational acceleration, the only “support” the plate could potentially provide is if the chick’s legs, feet, or claws were to reactively jolt downward faster than the rest of the chick’s body was moving downward under the force of gravity, and thereby gain at least some nominal support from the moving plate. Ex. 2002, ¶138. But Gershman specifically designed the system to avoid any such even minimal support. *Id.* Gershman teaches that the plate purposefully falls faster than this reactive ability of the chick. See Ex. 1003, 3. (“[a]s we observed in our fast filming, reaction of chicken libs [sic] irritation occurs very quickly, approximately 30-40 msec. If we assume that, the claws can pubescent [sic] 10 mm and this movement is uniformly

accelerated, . . . acceleration of plate must be equal to 12-15 m/sec²"); Ex. 2002, ¶138. Furthermore, Gershman teaches away from having the plate support the chick during free-fall and indicates that “in order to secure the symptoms of reflex opening of the wings ***legs should lose support faster than they can move down.***” Ex. 1003, 3; Ex. 2002, ¶138.

The ID further rejected PO’s contention that Gershman fails to teach the claimed “moving platform to support an unrestrained chick” because the chick is supported only when the movable plate is stationary as “rely[ing] on an implied claim limitation that does not appear to be supported” by the intrinsic evidence. ID, 17; Ex. 2002, ¶139. PO respectfully disagrees because the express claim language recites the chick “is supported” by the “moving platform” (Claim 6) and that the “moving platform” is “to support” the chick (Claims 1 & 9). *Id.* And even if the claim language does not itself make this clear (which it does), the intrinsic record does. *Id.* As noted above, Gershman was thoroughly vetted by the Examiner, and after several amendments it was determined that the claims were differentiated from Gershman (and as well as other prior art) in connection with this claim term. *See* Ex. 1002, 129 (“The closest prior art of record, namely, Tao...Yavnai..., and/or Yakov Gershman...do not disclose, teach or suggest, a moving platform to support

an unrestrained chick of a particular breed...as recited in independent claim 1.”).

Lastly, the ID noted that PO’s preliminary response “does not address Gershman’s teaching to add the moving plate system to the end of an industrial chick processing line, such as a conventional chick conveyor....” ID, 17; Ex. 2002, ¶140. But, Gershman’s discussion of *how* his system could be allegedly integrated into an industrial setting simply confirms that, as the POSITA would understand (*id.*, ¶140), the integration would suffer the panoply of issues discussed above. Gershman states as follows regarding how to perform the integration:

It will be necessary only simple modernization - to perform upgrading on their end - to add nodes lighting, electro optic unit, computer, moving plates with corresponding springs, activator, air ejectors for blowing chickens and appropriate bins.

Ex. 1003, 10. None of these modifications would solve the problems that a POSITA would recognize with bottlenecks and droppings—rendering the images useless—nor how to ensure only one chick gets on the platform at a time, and what happens to the chicks that are waiting. Ex. 2002, ¶¶140-141. All the above disclosure does is confirm that Gershman would simply tack his drop plate onto an industrial line (somehow). *Id.* For the reasons discussed above, that drop plate system is not a “moving platform **to support** an

unrestrained chick” as required by the claims. *Id.* Tacking it onto the end of an industrial chick line does not change that fundamental failure. *Id.*, ¶142.

For the foregoing reasons, Gershman does not satisfy the “moving platform to support an unrestrained chick” limitations relevant to Grounds 1, 4, 6, and 7, and Pierre does not cure this deficiency (nor does Petitioner contend that it does). *Id.*, ¶142. Accordingly, Grounds 1, 4, 6, 7 all fail. *Id.*

iv. Gershman Does Not Disclose the Additional Limitation of Dependent Claim 3

Dependent claim 3 of the ’124 patent requires “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.” Ex. 1001, 7:4-7. Ground 1 relies upon Gershman’s disclosure concerning blowing compressed air on a chick to satisfy the “stimuli may be . . . [a] stream of air blowing on the chick” portion of the additional limitation recited in claim 3. Pet., 25; Ex. 2002, ¶143.

As an initial matter, PO notes that “the stimuli” of claim 3 finds antecedent basis in independent Claim 1, which recites “at least one stimuli to cause the chick to open its wings.” Ex. 1001, 6:57-59; Ex. 2002, ¶144. But for the “stimul[us]” in Claim 1, Petitioner pointed to Gershman’s movable plate and argued that “the acceleration of the moving plate and the chick is a stimulus causing the chick to open its wings.” Pet., 22; Ex. 2002, ¶144. Now,

here for Claim 3, Petitioner improperly points to a new “stimuli” without reference to Claim 1. *Id.*, 25; Ex. 2002, ¶144. Because the recited “stimuli” in Claim 3 refers to the same “stimuli” introduced in Claim 1, Petitioner’s new identification of “blowing compressed air on a chick” as the stimuli of Claim 3 is insufficient as a matter of law because the Petitioner has not shown how each and every element is satisfied—*i.e.*, how the newly identified “stimuli” also satisfies Claim Element 1.2 for purposes of Claim 3. *See, e.g., Oxford Gene Tech. Ltd. v. Mergen Ltd.*, 345 F. Supp. 2d 431, 444 (D. Del. 2004) (excluding expert report on validity where the expert “d[id] not undertake the required element-by-element comparison to show that each and every limitation in the asserted claims . . . is present in a combination of prior art references”); Ex. 2002, ¶144

Moreover, and equally as fatal, Gershman’s teaching of blowing compressed air at the chick has nothing to do with introducing a “stimuli to cause the chick to open its wings” as required by Claims 1 and 3. Ex. 1003, 6; Ex. 2002, ¶145. Rather, Gershman’s air-blowing is a mechanism for pushing the chick off the plate after it has already experienced the fall and had its picture taken. Ex. 1003, 6; Ex. 2002, ¶145. Specifically, Gershman states that “[o]ur tests also showed the possibility of blowing chick from a plate with compressed air (1.6 ATM) without any damage.” Ex. 2002, ¶145. That is, in

Gershman, after the test was performed and picture was taken, “air ejectors for blowing chickens” could be used to move the chickens into “appropriate bins.” Ex. 1003, 4, 6; Ex. 2002, ¶145. This is not a “stimuli” to make the chicks open their wings to capture an image of them. Ex. 2002, ¶145.

Accordingly, Gershman does not disclose “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” as Petitioner proposes. Ex. 2002, ¶¶146-147. Thus, even if a POSITA would have been motivated to combine Gershman and Pierre as proposed (they would not), the system that resulted from that combination would not satisfy each and every element of dependent claim 3. *Id.*, ¶¶145-147.⁴

2. Pierre (All Grounds)

Petitioner relies on Pierre as disclosing, for all Grounds, the claimed “database of images” of various chick features to which the image of the chick is compared. It does not and, thus, all of Petitioner’s proffered obviousness

⁴ To the extent Ground 3 relies on Pierre to satisfy this limitation, it does not. No “moving platform” of any sort is disclosed in Pierre. Pierre states that each chick is placed one at a time into a situation where it is falling such that it will open its wings. Ex. 1004, 2. But Pierre does not disclose how the chicks get to that point in a process, much less a mechanism that would be practical in the industrial setting Pierre references. Ex. 1004 at Abstract, 3. Instead, it provides no disclosure, teaching, or suggestion to a POSITA regarding a moving platform. Ex. 2002, ¶148.

combinations fail because none of the cited prior art references disclose this limitation. Ex. 2003, ¶¶38-40, 41-45; Ex. 2002, ¶148.

**i. Pierre Does Not Disclose the “database of images”
Required By All Independent Claims**

Petitioner relies on Pierre as disclosing and rendering obvious the “*database of images of male and female wing patterns for the particular breed*” (Claim 1), “*database of images of healthy and unhealthy chicks of the same breed*” (Claim 6), and “*database of images of a predetermined feature of a chick*” (Claim 9).⁵ But, Pierre does not disclose “a database” at all, much less one of images of the particular features claimed. Ex. 2003, ¶46; Ex. 1001, 6:58-62. 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. *Id.*, ¶¶46-47.

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

⁵ In some instances, Petitioner argues that computing systems of some other references (*e.g.*, the “computer” of Gershman, the “computer processor” of Yavnai) make it obvious that Pierre’s reference image would be stored in a “database,” but ultimately Petitioner relies on Pierre for the disclosure of this element. A “computer” or “computer processor” is not a database and Petitioner sets forth no evidence showing why a POSITA would modify Pierre to include a database.

digital image used for processing by comparison with a reference image”); Ex. 2003, ¶¶46-47. The particular reference image Pierre teaches to use for the comparison depends on the particular breed of bird, its stage of growth, or particular application. Ex. 1004, 5 (“image processing may be optimal for comparison with a reference image useful for each specific application”); *id.* (“the invention finds a particularly advantageous application in the industrial breeding of poultry when applied to the young chicks of each batch breed”); *id.* (teaching that the single “reference image” is for “similar chicks at the same stage of growth”); Ex. 2003, ¶¶48-49. The comparison in Pierre, however, is *always* to a single reference image. Ex. 2003, ¶¶48-49. 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). *Id.*, ¶47.

A POSITA would have recognized this material distinction from the claims based on the disclosure, *Id.*, ¶¶55-60, and Petitioner’s attorney argument handwaving it away fails to meet its burden to show disclosure of the claimed database.

ii. Pierre Does Not Disclose Comparing A Captured Image to Images of “male and female wing patterns” (Claim 1) or “healthy and unhealthy chicks” (Claim 6)

Moreover, Pierre does not disclose comparing a captured image to images of “male and female wing patterns” (Claim 1) or “healthy and unhealthy chicks” (Claim 6). Ex. 1001, 6:60-61; Ex. 2003, ¶¶48-50. Pierre merely teaches “capturing of the digital image” and “processing by comparison with a [single] reference image.” Ex. 1004, 5; Ex. 2003, ¶¶48-50.

As to Claim 1, there is no disclosure whatsoever that the reference image is of **both** “male and female” wing patterns, and a POSITA would understand that the single reference image is necessarily only of one gender—male or female. Ex. 2003, ¶¶49-50. Likewise, as to Claim 6, there is no disclosure in Pierre that the reference image is of **both** “healthy and unhealthy” chicks, and a POSITA would understand that the single reference image would be necessarily only either healthy or unhealthy chicks. *Id.* A POSITA would have recognized this difference, as Dr. Karam explains. *Id.*, ¶¶51-52. Without any expert analysis to support its misinterpretation, Petitioner has overlooked this distinction in the Pierre disclosure that guts Petitioner’s challenge. *Id.*

3. Yavnai (Grounds 2 & 8)

Independent Claims 1 and 9 of the ’124 patent require “a moving platform to support an *unrestrained* chick of a particular breed.” Ex. 1001,

6:55-56. In Grounds 2 and 8, Petitioner relies on Yavnai, and only Yavnai, as disclosing this limitation. Yavnai does not and thus Petitioners Grounds 2 and 8 fail. Ex. 2002, ¶¶149-163.

Yavnai fails to disclose the “unrestrained” limitation for two independent reasons: *First*, at the critical time when the chick’s image is taken, Yavnai uses poles that restrain the chick’s legs and feet in the lateral direction and prevent its wings from closing. Ex. 1005, Abstract, [0042]; Ex. 2002, ¶¶149-150. *Second*, Yavnai uses the poles to restrain the chick’s legs and feet in the lateral direction over the entire length of the moving platform. Ex. 2002, ¶¶149-150. PO addresses first the meaning of “restrain” before turning to the two independent reasons Yavnai fails to disclose this limitation.

i. The Plain and Ordinary Meaning of “Restrain”

“Restrain” is a simple word meaning “to prevent from doing, exhibiting, or expressing something,” “to limit, restrict, or keep under control,” or “to moderate or limit the force, effect, development, or full exercise of.” Ex. 2005; Ex. 2002, ¶151. That is exactly what the angled poles of Yavnai do to the chicks on the moving platform: they initially keep the chicks under control by restraining their legs and feet to limit lateral movement and guide them along the platform in a defined narrow path; then, further along, they prevent the chicks from lowering their wings. Ex. 2002,

¶151. Simply put, the poles limit the full exercise of the chick’s movement. *Id.*, ¶151.

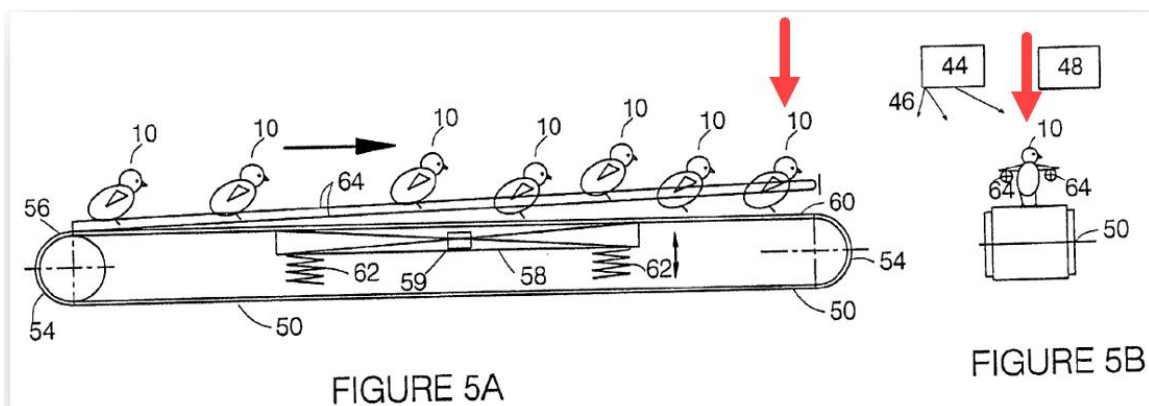
The ID appears to conclude that Yavnai’s poles do not restrain the chick solely because Yavnai “uses the word ‘support’ rather than ‘restrain’” in describing the poles. ID, 20-21. But, this reasoning is mistaken because “support” and “restrain” are not mutually exclusive concepts, and in Yavnai the poles *both* support and restrain the chick. Ex. 2002, ¶152. It is irrelevant that Yavnai does not use the express word “restrain” when that is exactly what the support poles in fact do—they restrain the wing movement of the chick by forcing them to stay open. *Id.*

ii. Yavnai’s Poles Restrain the Chick at Precisely the Time the Claims Require That the Chick Be Unrestrained (During Imaging)

The claims require that the chick be unrestrained throughout the recited process, including when the chick is stimulated and when it is imaged. *See* Ex. 1001, 6:54-67. This is clear from application of basic principles of antecedent basis in claim interpretation. Specifically, Claim 1 first recites a moving platform to support “***an unrestrained chick,***” and then goes on to recite that at least one stimuli causes “***the*** chick” to open its wings and an image capture device to capture at least one image of “***the*** chick.” *Id.* Accordingly, the only antecedent basis for “the chick” that is stimulated and

imaged is the “unrestrained chick.” *Id.* This accords with the specification’s disclosure, where the chick is unrestrained throughout the stimulation and imaging process. Ex. 2002, ¶153. It is further consistent with the prosecution history, where the PO distinguished the claimed system over prior art because the claimed system “allows a chick to be moved unrestrained through the system.” Ex. 1002, 196; Ex. 2002, ¶153.

In Yavnai, however, there should be no dispute that the chick’s wings are restrained in an open state at least by the point the image of the chick is captured. Ex. 2002, ¶154. Indeed, the chick is restrained in *two ways* by the time it reaches the point of imaging (which point is shown in Figures 5A-5B below by the red arrows, followed by a demonstrative further illustrating the restraint imposed on the chick by the system of Figures 5A and 5B in Yavnai). Ex. 2002, ¶154.



Ex. 1005, Figs. 5A-5B; Ex. 2002, ¶155.

As shown in the above figures from Yavnai: *First*, the chick's body is restrained from lateral movement by the poles (64), which prevent its lateral movement on the platform from the start (56) to the end (60) of it. Ex. 2002, ¶¶155-156. Notably, the Yavnai system has no side walls, which are necessary to keep the chick on the moving platform when, as in the '124 system, it is free to move about.⁶ *Id.*, ¶156. Thus, 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. *Id.* Petitioner all but concedes that the poles restrain the chick from lateral movement over the entire moving platform when it argues that “[t]he chick can also move backwards and forwards along the conveyor belt,” implicitly acknowledging that the chick *cannot* move laterally due to the poles. Pet., 25; Ex. 2002, ¶156.

Second, the chick's wings are restrained by the poles (64) to keep them in an open state at the point of imaging. Ex. 2002, ¶157; Ex. 1005, Abstract (“two poles support[] the spread wings”); [0042] (“Poles 64 support the spread wings ...”). These poles are said to “support” the chick's wings, meaning support them in an open state and prevent/restrict the chick from closing its

⁶ Sidewalls do not “restrain” a chick, in the same way a person would not say they are “restrained” simply because they are walking down a hallway.

wings as it would naturally do absent the poles. Ex. 2002, ¶157. That the reference calls them “support” poles only confirms this: there would be no need to “support” the wings in an open position unless the chick would otherwise potentially close the wings. Ex. 1005 at [0042]. The poles are there to provide an upward supporting force preventing the chick from closing its wings while stimulated. Ex. 2002, ¶157. The support poles have no function other than to limit the movement of the chick’s wings and body and thus restrain them. Ex. 1005 at Fig. 5B; Ex. 2002, ¶157. Because the chick that is imaged in Yavnai is not an “unrestrained” chick, Yavnai fails to meet this limitation. Ex. 2002, ¶157.

Notably, Petitioner appears to concede that at least by the end of the moving platform, when the chick is imaged, the chick is restrained. Petitioner includes the below annotated depiction of Yavnai Figure 5A. Pet., 26. It is only the portion of the moving platform in the red box, *before* the poles plainly contact and restrict the movement of the wings, that Petitioner contends to be where the chick is “unrestrained”. Ex. 2002, ¶158.

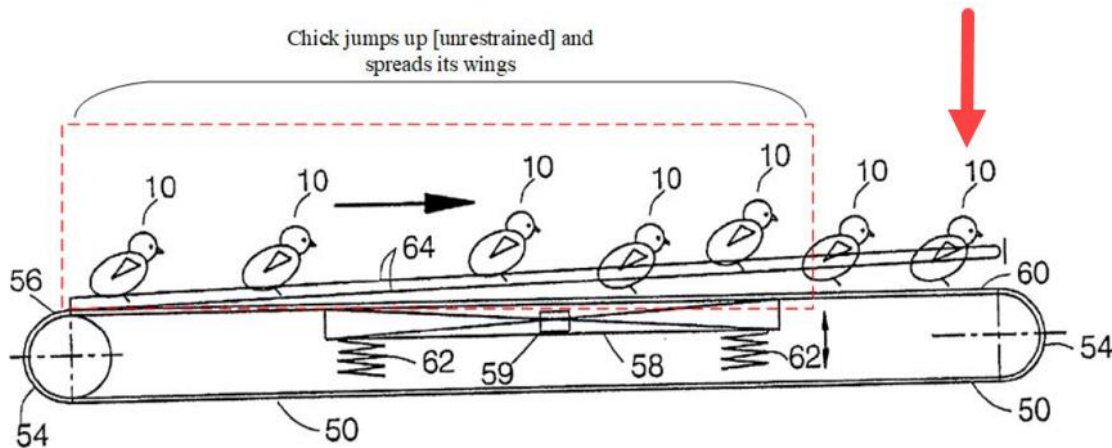


FIGURE 5A

Ex. 1005, Fig. 5A; Ex. 2002, ¶158.

But, as can be seen above, at the critical moment where the chick is imaged (past the red box, where PO has supplied to the image a red arrow) the chick and its wings are plainly restricted by the poles. Ex. 2002, ¶158. Moreover, even in the red boxed area shown in Fig. 5A, above, the chick is still restrained from lateral movement. *Id.*

Thus, Yavnai fails to disclose the claimed moving platform to support an “unrestrained” chick. *Id.*

Notably, Petitioner asserts that “unrestrained chick” has the POM of “a chick that can ‘freely move its wings while on the moving platform.’” Pet., 19. Plainly, by the time the chick reaches the imaging portion of the moving platform it cannot freely move its wings because the poles are in the way. Ex. 2002, ¶159. Thus, Yavnai fails to disclose this limitation even under Petitioner’s proffered interpretation of this term. *Id.*

iii. Yavnai's Poles Restrain the Chick Laterally Over the Entire Moving Platform

Yavnai further fails to disclose this limitation even under an (erroneous) interpretation of the '124 patent claims wherein they are satisfied so long as the chick is unrestrained at any time on the moving platform. Ex. 2002, ¶160. This is because in Yavnai the chick is restrained in the lateral direction over the entire length of the moving platform. *Id.* As explained above, the Yavnai system has no side walls, which are necessary to keep the chick on the moving platform when, as in the '124 system, it is free to move about. *Id.* Thus, 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. *Id.*

iv. The Applicants Specifically Amended the Claims to Add the “Unrestrained” Chick Limitation to Distinguish Over Yavnai’s “Support” Poles

Further confirming that “unrestrained chick” *does not* encompass a system where the chick is restricted by support poles, PO during prosecution amended the claims to add the limitation that the chick is “unrestrained” *specifically* to distinguish Yavnai. Ex. 2002, ¶161. As originally filed, Claim 1 recited in pertinent part a “moving platform to support a chick.” Ex. 1002, 505; Ex. 2002, ¶161. On November 5, 2019, however, the Examiner issued a rejection finding that Tao in view of Yavnai rendered the claims obvious,

noting Yavnai “teaches a method of automatic sexing of chicks.” Ex. 1002., 218; Ex. 2002, ¶161. In response, the PO amended Claim 1 to add the “unrestrained” limitation. Ex. 1002, 184 (2/5/20 Amendment) (“a moving platform to support an unrestrained chick”); Ex. 2002, ¶161.

The PO explained that the “unrestrained” limitation distinguished the claimed invention over Yavnai because Yavnai’s poles restrain the chick:

Yavnai et al. 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; Ex. 2002, ¶162. This statement makes clear that the claim scope does not cover systems that use poles to restrain the chick and plainly informs the claim scope. *See, e.g., Personalized Media Communications, LLC v. Apple Inc.*, 952 F.3d 1336, 1340 & 1344-46 (Fed. Cir. 2020) (“[A]n applicant's repeated and consistent remarks during prosecution can define a claim term by demonstrating how the inventor understood the invention.”).

After the amendment, the Examiner issued a notice of allowance agreeing that Yavnai did not disclose a system where the chick is “unrestrained,” expressly stating that Yavnai “do[es] not disclose, teach or suggest, a moving platform to support an unrestrained chick of a particular

breed ...” Ex. 1002, 129; Ex. 2002, ¶163. The emphasis on “unrestrained” was the Examiner’s.

The Applicant and Examiner alike understood “unrestrained” to exclude systems like Yavnai with support poles that restrict a chick, as the POSITA and public alike would understand from the prosecution history. Ex. 2002, ¶163. There is no basis to uproot the clearly drawn distinction between an “unrestrained” chick and one restricted by support poles. *Id.*

v. Yavnai’s Platform is Not Angled (Claims 16-18)

For claims 16-18, the Petition asserts that it would have been “obvious to a POSITA” to use an “angled conveyor,” which the Petition states are “taught by Pierre” and “taught by Yavnai.” Pet., 63-64. But neither Pierre nor Yavnai discloses angled conveyors whatsoever, and Petitioner points to nothing else beyond its attorneys’ conclusory and unsupported statement that it was “well known.” *Id.* Petitioner’s argument is, again, factually incorrect. The cited prior art does not teach or suggest using an “angled conveyor” to stimulate a chick to open its wings for imaging. See Ex. 2002, ¶149.

4. Goodwin (Grounds 3, 5)

Grounds 3 and 5 rely on Goodwin as disclosing “a moving platform to support *an unrestrained chick* of a particular breed,” and Goodwin in combination with Pierre as disclosing “an image capture device to capture at

least one image of *the chick*.” Specifically, Petitioner asserts that “[i]t would have been obvious to a POSITA to replace the manual chick sexing station of Goodwin with the automated sexing of Pierre by placing Pierre’s image capture device at the upper end of Goodwin’s conveyor 18 and capturing an image of each chick *when it drops off the end of the conveyor*.” Pet., 31; Ex. 2002, ¶164.

Petitioner’s argument confirms that Goodwin does not disclose the claimed “moving platform” because, as explained in *supra* Section VI, the claims require that the chick be supported by the moving platform when its image is taken. Ex. 2002, ¶165. In Goodwin, however, as Petitioner admits, the chick *drops off* the conveyor right before the Petitioner proposes an image would be taken of the chick. *Id.* Thus, the chick would not be supported by the “moving platform” when its image is taken and thus Goodwin does not disclose the claimed moving platform. *Id.* In this way, Goodwin fails to disclose this limitation in a similar way that Gershman does. *Id.*, see *supra* Sections VII.A.1.i-VII.A.1.iii.

B. The POSITA Would Not Have a Motivation to Combine or Reasonable Expectation of Success

A second independent basis for why the Petition fails is the Petitioner has not shown, and cannot show, a motivation to combine or an RES for its

proffered combination. Ex. 2002, ¶166. The Petition relies heavily on arguments about what a POSITA would allegedly do to modify prior art, understand from such prior art, and find obvious from the prior art—yet the Petitioner submitted *no expert analysis whatsoever*. This even alone should warrant dismissal of Petitioner’s conclusory unsupported arguments.

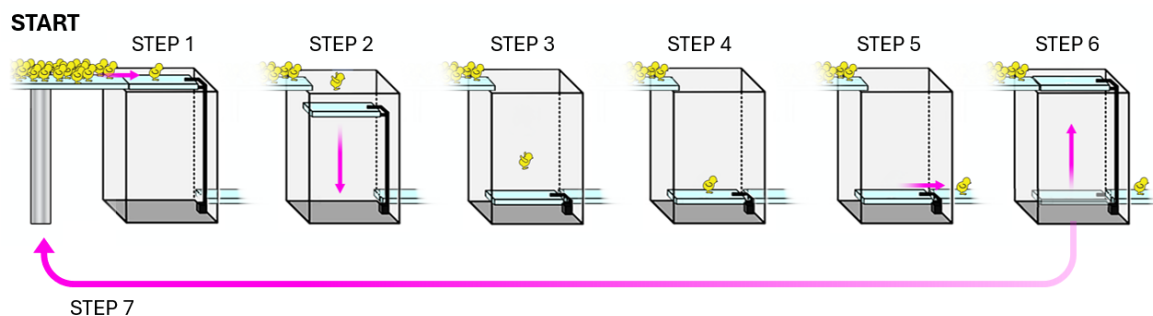
1. A POSITA Would Not Be Motivated to Combine Gershman with Pierre or Had an RES in Doing So (Grounds 1, 4, 6-7)

A POSITA would not have been motivated to combine Gershman and Pierre as Petitioner proposes. *Id.*, ¶167. For its evidence of obviousness, all Petitioner cites to is Gershman’s statement that “[i]t is obvious, that this idea can simply adapted [sic] on to the line that are wide used [sic] for counting and packaging hatching chicks,” and then in conclusory fashion argues that a POSITA would have found it obvious to integrate Gershman with Pierre. Ex. 1003, 10; Pet., 24. Petitioner is incorrect. Ex. 2002, ¶167.

Gershman’s proposed integration is simply a hope or wish, which fails to acknowledge much less solve the myriad problems that a POSITA would immediately grasp in such a combination, and reject it as unworkable. Ex. 2002, ¶168. A POSITA would have recognized that combining Gershman’s movable plate system into any industrial poultry hatching system (which

Pierre describes its system to be (Ex. 1004, Abstract, 2-3)) would unacceptably slow down the operation. Ex. 2002, ¶¶167-175.

Specifically, the Gershman-Pierre combination would result in a system that requires putting individual chicks, one by one, onto the stationary plate and individually performing the drop plate operation. Ex. 2002, ¶169. This process is illustrated below, with the plate starting stationary at Step 1, dropping out from under the chick at Step 2, becoming stationary again at Steps 3 & 4, removing the chick from the plate at Step 5, then having the plate do back up at Step 6, then somehow getting one and only one more chick back on the stationary plate at Step 7. *Id.*



Id.

A POSITA would have recognized immediately that Gershman-Pierre would result in a system that cannot achieve the throughput required by industrial processes of the time. See Ex. 2002, ¶170; citing Ex. 2006, 1 (referring to “hatcheries producing more than one million chicks per week.”). Indeed, one of the other references Petitioner cites (Tao) observes that, even

as of 1999, a typical hatching operation will produce roughly 250,000-500,000 baby chicks a day that need to be sexed and sorted as quickly as possible. Ex. 1006, 3:7-10; Ex. 2002, ¶170. Even back then, Tao observed that there were solutions for “distinguish[ing] male and female chicks at an accuracy of up to 95% or higher at up to 12 chicks / sec.” Ex. 1006, 3:7-10. By the time of the invention in the ’124 patent, throughput demands were even higher. Ex. 2002, ¶170. Thus, there would be no reason that a POSITA would be motivated to combine Gershman with Pierre. *Id.*, ¶¶170-175.

This error of the proposed combination is a prime example of why Petitioner’s failure to provide any expert analysis is fatal to the Petition. Petitioner apparently did not consider any of the many reasons why a POSITA would not be motivated to make the combination. *Id.*, ¶171. Instead, Petitioner’s attorneys somehow arrived at the conclusion that in 2017 a POSITA would be motivated to combine Gershman and Pierre. Pet., 24; Ex. 2002, ¶171.

With the benefit of expert analysis, the lack of motivation becomes clear. For example, a POSITA would recognize that, to the extent it is even possible, combining Gershman’s drop plate solution into any industrial chick processing system (such as Pierre’s) would be like using a vehicle lift instead of an offramp for vehicle routing—the traffic jam would be tremendous. In

the context of high-volume chick hatchery operations, such a traffic jam would be completely unacceptable. Ex. 2002, ¶172. A POSITA would recognize this, and would understand that the Gershman-Pierre combination would represent a monumental step backward in the progress already made in earlier automated systems. *Id.*, ¶¶172-175. There is simply no way that a POSITA would have been motivated to make the Gershman-Pierre combination to achieve an unworkable solution. *Id.*

Moreover, a Gershman-Pierre combination, to the extent they could even be combined, would lead to a build-up of chick droppings on Gershman's transparent plate. *Id.*, ¶173. This buildup of droppings would prevent the system from operating to successfully sex chicks. *Id.* Because the imaging process in Gershman relies on the clarity of the plate and white light illumination to capture a black and white image with high clarity, a POSITA would recognize that a Gershman-Pierre system would be compromised by droppings left on the plate.⁷ *Id.* Neither Gershman nor Pierre discuss or disclose anything about how to filter such droppings out of the image and/or clean it off.⁸ *Id.*

⁷ The '124 patent inventions do not rely on a transparent platform to take images of the chick and thus do not suffer from this problem in Gershman.

⁸ Cleaning up the droppings manually would defeat the purpose of automation in the first place, and simply result in personnel jobs being

Petitioner's conclusion that a POSITA would have been motivated to make the combination also overlooks numerous other problems with combining Gershman with any other systems (including that described in Pierre). *Id.*, ¶174. For instance, the Gershman reference does not contain any discussion or disclosure of how chicks can be moved, one at a time, onto the movable plate in a manner that does not injure the chicks and/or does not overload the drop plate with more than one chick at a time. *Id.* Similarly, there is no discussion or disclosure of how chicks should be centered on the movable plate such that, when the plate is dropped, their wings won't hit the sidewalls during the fall. *Id.* Such an event would make the image substantially unusable for the purpose Gershman and/or Pierre propose, and also may cause injury to the day-old chick. *Id.* Avoiding such injuries is important because injured chicks will be pushed away by un-injured chicks from feeders and water dispensers, resulting in malnutrition and mortality. *Id.* Similarly, there is no discussion or disclosure of what happens to the chicks that are waiting for the movable plate to return, and how they ensure that those chicks that are waiting do not fall down the movable plate shaft while in operation. *Id.*, ¶175.

changed from manual sexing to laborious cleanup, all while decreasing the throughput of the entire operation. Ex. 2002, ¶173.

Gershman's and Pierre's slim disclosures never address any of these issues, much less offer solutions. *Id.*, ¶¶173-175. Pierre's lack of any disclosure on how to make comparisons with a single reference image that could yield meaningful results compounds the POSITA's lack of motivation to make any combination with Pierre. *Id.* For example, Pierre does not discuss much less provide a solution to the problem of how a single reference image approach can be used to make determinations regarding whether a chick is health or unhealthy. Ex. 2003, ¶¶48-50; Ex. 2002, ¶¶173-175. The POSITA would understand the magnitude of this problem, given myriad possible health problems with chicks yet a single reference image. *Id.*

A POSITA would have neither a motivation nor expectation of success in combining Gershman with Pierre or any other industrial system. Confirming this objectively, Gershman ends with a plea for a "strategic partner" to attempt the approach in the "poultry industry." Ex. 1003, 10; Ex. 2002, ¶175. It should come as no surprise that there is no evidence that any POSITA ever took up that offer. Ex. 2002, ¶175.

2. A POSITA Would Not Be Motivated to Combine Yavnai with Pierre (Grounds 2 & 8)

A POSITA would not have been motivated to combine Yavnai and Pierre or had a reasonable expectation of success in doing so. Ex. 2002, ¶176.

As an initial matter, the POSITA would recognize that the system of Yavnai simply does not work for the intended purpose of industrial chicken sexing for two reasons:

First, Yavnai requires the chick to be highly restrained with poles to successfully take a picture of it in the precise configuration (shown in Figure 5B) required for it to work. Ex. 2002, ¶177. But, one-day old chicks are very fragile and prone to injury. *Id.* Moving them quickly along a conveyor only to hit into poles under their delicate underwings would result in a high chance of injury to the chick, and thus the POSITA would not be motivated to use the Yavnai system at all. *Id.* The POSITA would especially be disinclined to use it in combination with Pierre, which describes itself as for an industrial system. *Id.* The speed of an industrial system and a chick hitting the poles at the rate required for such systems would only exacerbate the injury issues already present in Yavnai. *Id.*

Second, as discussed above Yavnai requires the chick to be highly restrained with poles to work. See Ex. 2002, ¶178. Yavnai teaches restraining the chick from lateral movement when it steps on the conveyor and restraining the chick's wings with poles leading up to the point of imaging. But, what Yavnai's system fails to account for is its restraint system *may fail* if the baby

chicks *rotate* around in place before their wings are restrained, as shown in the annotation to Yavnai's Figure 5A, below:

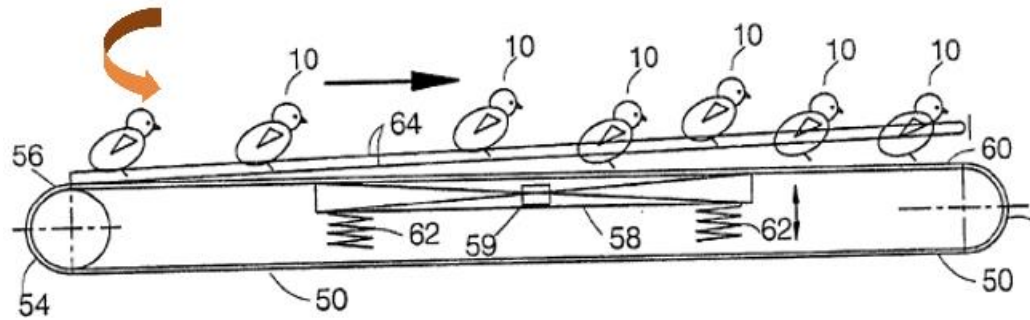


FIGURE 5A

Ex. 2002, ¶178. If the chick rotates around in place before its wings are restrained, then by the time it gets to the end of the conveyor it will be in an undesired position. *Id.* The chick will still be restrained laterally, and it will be restrained in a position unsuitable for imaging.

If a chick is even partially not in alignment before its wings reach the poles, the system fails. *Id.*, ¶179. In Yavnai, either the chick successfully has its wings restrained (and thus fails to satisfy the “unrestrained” limitation) or the system malfunctions and the chick is restrained in the wrong way, causing the system to fail to sex the chick. *Id.* Thus, the POSITA would not be motivated to use Yavnai's system at all, nor to combine it with Pierre (which would do nothing to address this fundamental failure of Yavnai). *Id.*, ¶¶178-179.

Petitioner’s entire argument regarding this combination is that “[i]t 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.” Pet., 28. Petitioner’s conclusory attorney argument is not only insufficient to meet its burden under Federal Circuit precedent, but it also misrepresents Yavnai. Ex. 2002, ¶180. The system in Yavnai was (purportedly) able to determine sex by processing a single image without resorting to a database of images for reference, and thus there is no need or motivation to add another imaging and/or computer processing system as Petitioner suggests. *Id.*, ¶¶180-181. Indeed, if Yavnai was able to determine sex by processing a single image without resorting to a database of images for reference, combining Pierre’s database of images into the system of Yavnai would only serve to add redundancy to the system that was not needed as long as appropriate “blue monochromatic light” was used as Yavnai teaches. Ex. 1005 at [0038]; Ex. 2002, ¶¶180-181.

More specifically, the system of Yavnai already provides a system to “enhance the contrast between chick 10’s white wing tips and yellow body,” and applies image processing without the need for a database of reference

images. Ex. 2002, ¶181. A POSITA considering the system of Yavnai would not be motivated to combine Yavnai with a reference like Pierre, which would change the principal of operation of Yavnai. *Id.* Indeed, a POSITA would understand that Yavnai's system operated to analyze feathers of a chick without need for a reference image. *Id.* Petitioner's proposed combination changes that feature of Yavnai fundamentally, trying to shoehorn the teachings of Pierre into the Yavnai system and ignore the fact that no POSITA would be motivated based on Yavnai's teachings to look for a different solution, such as Pierre's, that only served to add redundancies to the Yavnai system. *Id.*

A POSITA would not be motivated to combine Yavnai with Pierre and thus Grounds 2 and 8 fail. Ex. 2002, ¶181.

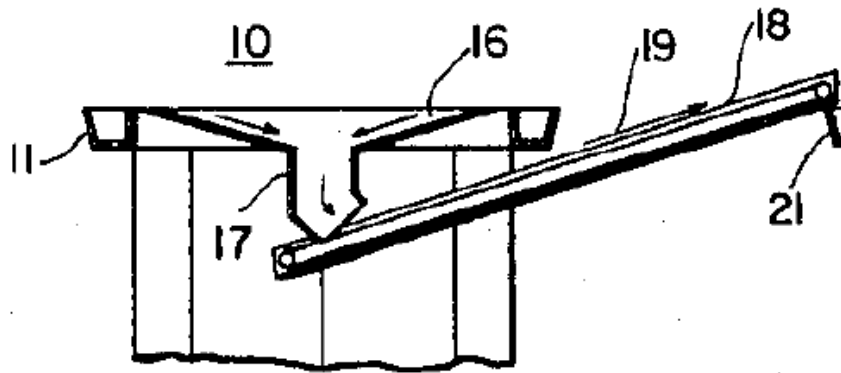
3. A POSITA Would Not Be Motivated to Combine Pierre with Goodwin as Petitioner Proposes (Grounds 3 & 5)

A POSITA would not have been motivated to combine Pierre and Goodwin as Petitioner proposes. Ex. 2002, ¶¶182-186. For its obviousness argument, all Petitioner states, again without any support, is that “[i]t would have been obvious to a POSITA to replace the manual chick sexing station of Goodwin with the automated chick sexing station of Pierre by placing Pierre's image capture device at the upper end of Goodwin's conveyor 18 and

capturing an image of each chick when it drops off the end of the conveyor to further automate the Goodwin system and reduce the number of personnel required to perform chick sexing with a reasonable expectation of success.” Pet., 31.

A POSITA would not be so motivated. Ex. 2002, ¶¶182-186. For example, the purpose of determining sex of a chick during transport of a chick on a “moving platform” is to enable the system to ultimately route different chicks into different groups based on the sex determination. *Id.*, ¶183. In Petitioner’s proposed combination, Pierre’s image capture device would be placed “at the upper end of Goodwin’s conveyor 18” such that the chick is put into a falling state – to cause it to open its wings – as the chick drops off the end of the last conveyor, and then “capturing an image of each chick when it drops off the end of the conveyor.” Pet., 31. What Petitioner fails to account for is that once the chick is dropped off the conveyor, the chick is no longer on the conveyor such that it can be routed according to its sex. Ex. 2002, ¶183. That is, the chick would need to be picked up manually and physically placed in the correct location. *Id.* This would defeat the purpose of the automated “moving platform” based inspection system claimed in the ’124 patent. Because of this, a POSITA would not be motivated to make the proposed Pierre-Goodwin combination. *Id.*

Additionally, Petitioner fails to account for the harm that may be caused to the chick by just being dropped off of the conveyor 18, particularly given that the conveyor 18 is substantially higher off the ground than a chick is expected to be able to fall without injury. Ex. 2002, ¶184.



Ex. 1007 at Fig 2 (cropped).

Pierre's and Goodwin's minimal disclosures never address any of these issues, nor does Petitioner. Ex. 2002, ¶¶184-186. A POSITA would have neither a motivation nor expectation of success in combining Pierre and Goodwin. *Id.* By contrast, a POSITA would expect the combination of Pierre-Goodwin to result in a system that would cause harm to chicks, be inefficient, and represent a considerable step backward and failure relative to solutions at the time, and the POSITA would have no motivation to do so. *Id.*

VIII. SECONDARY CONSIDERATIONS CONFIRM THE NON-OBVIOUSNESS OF THE '124 PATENT CLAIMS

Secondary considerations, or “objective indicia,” of non-obviousness are critical in the overall inquiry under 35 U.S.C. § 103. As the Federal Circuit has noted, these indicia can “often establish that an invention appearing to have been obvious in light of the prior art was not.” *See Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1538 (Fed. Cir. 1983); *Liqwd, Inc. v. L’Oreal USA, Inc.*, 941 F.3d 1133, 1136-37 (Fed. Cir. 2019). These considerations are crucial in preventing hindsight bias, which can distort the obviousness analysis. *See Bristol-Myers Squibb Co. v. Teva Pharms. USA, Inc.*, 752 F.3d 967, 977 (Fed. Cir. 2014). When a nexus exists between these secondary considerations and the claimed invention, this evidence can carry substantial weight. *See Rambus Inc. v. Rea*, 731 F.3d 1248, 1256 (Fed. Cir. 2013).

The following secondary considerations strongly support non-obviousness. Ex. 2002, ¶¶187-193.

A. Long-Felt but Unmet Need

Prior to the '124 patent inventions, industrial hatchery operations faced persistent challenges in achieving sexing and health detection with high throughput and high accuracy while at the same time prioritizing chick welfare. Ex. 2002, ¶¶188-190. Manual inspections, and automated systems

that involved too much delay or were not sufficiently accurate, did not meet the needs of industrial processing. *Id.*

This long felt need was widely recognized in the prior art. *Id.*, ¶189. Yavnai for example states that there “is thus a widely recognized need for, and it would be highly advantageous to have a way to automate the spreading of the chicks’ wings, which in turn would allow a fully automated sex identification sorting process based on examination of wing tips.” Ex. 1005, [0005]. While recognizing the need for a solution, Yavnai failed to achieve one for the reasons discussed above. *See supra* VII.A.3; Ex. 2002, ¶189. Unsurprisingly, there is no evidence of any real-world use of the Yavnai system (nor of any of the other prior art reference systems relied on by Petitioner). Ex. 2002, ¶189.

The ’124 patent addresses these long-standing needs by offering an elegant solution that strikes a long needed balance high-throughput and high accuracy demands, while at the same time avoiding injury and prioritizing chick welfare. Ex. 2002, ¶190. PO respectfully submits that there is a strong nexus between the long-felt and unmet-need that the ’124 patented technologies resolve, as described above. *Id.*

B. Unexpected Results

A key innovation of the '124 patent is the recognition that by avoiding mechanisms that restrain the chick while on a “moving platform” yet still provide the needed wing-spreading stimuli, and by leveraging a whole database of images of chick features for a particular breed, that higher throughput could be achieved with greater accuracy. Ex. 2002, ¶¶191-193. As demonstrated in the prior art – the conventional wisdom before the '124 patent was that it was necessary to restrain a chick in some manner to image it (as in Yanvai for example) or that the chick needed to be free-falling and unsupported to take its image (as in Gershman). *Id.* The '124 Patent bucked conventional wisdom, creating a system where a chick is *unrestrained* yet *supported* as it is imaged. *Id.*

Further, the amount the chick was physically manipulated was reduced by the solution provided in the '124 patent, thereby leading to fewer injuries at the hatchery and reduced mortality in the farm. Prior art methods had been unable to achieve the optimal balance achieved by the '124 patent's elegant solution, perhaps considering them too complex or resource-intensive to implement. *Id.*

These unexpected results further reinforce the non-obviousness of the '124 Patent. *Id.*, ¶193. More specifically, PO respectfully submits that there

is a strong nexus between the '124 patented technologies and the unexpected results observed by the implementation of the claimed technologies, further supporting a finding of non-obviousness of the challenged claims. *Id.*

XIV. CONCLUSION

For the foregoing reasons, PO respectfully submits that the Board should uphold the validity of the challenged claims.

CERTIFICATE OF LENGTH (37 C.F.R. §§ 42.24)

The undersigned hereby certifies that, according to the word-processing system used to prepare the foregoing document, this document has 13,973 words and thus complies with the applicable word limit.

Date: November 12, 2024

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6, the undersigned hereby certify that the foregoing Patent Owner Response was served on November 12, 2024 by e-mailing copies to:

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