

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ROBE LIGHTING S.R.O.,
Petitioner,

v.

GUANGZHOU HAORYANG ELECTRONIC CO., LTD.,
Patent Owner.

IPR2025-01016
Patent 11,988,373 B1

Before GEORGE R. HOSKINS, ARTHUR M. PESLAK, and
STEPHEN E. BELISLE, *Administrative Patent Judges*.

PESLAK, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

ROBE lighting s.r.o. (“Petitioner”) filed a Petition requesting an *inter partes* review of claims 1–13 (“the Challenged Claims”) of U.S. Patent No. 11,988,373 B1 (Ex. 1001, “the ’373 patent”). Paper 1 (“Pet.”). Guangzhou Haoyang Electronic Co., Ltd. (“Patent Owner”) did not file a Preliminary Response. The case was referred to the Board to determine whether or not to institute *inter partes* review. Paper 6.

We have authority, acting on the designation of the Director, to determine whether to institute an *inter partes* review under 35 U.S.C. § 314(a). *See* 37 C.F.R. § 42.4(a) (2024) (“The Board institutes the trial on behalf of the Director.”). Under 35 U.S.C. § 314(a), an *inter partes* review may not be instituted unless the information presented in the Petition shows “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

Considering the Petition as well as all supporting evidence, we conclude that the information presented in the Petition establishes a reasonable likelihood that Petitioner would prevail in its challenge of at least one claim of the ’373 patent as unpatentable. Pursuant to 35 U.S.C. § 314, we hereby institute an *inter partes* review of all challenged claims of the ’373 patent on the grounds stated in the Petition.

A. Related Matters

Petitioner asserts that “[t]here is no other judicial or administrative matter that would affect, or be affected by, a decision in this proceeding.” Pet. 1. Patent Owner makes a similar assertion. Paper 4, 2.

B. Real Parties-in-Interest

Petitioner identifies itself as the sole real party-in-interest. Pet. 1.
Patent Owner identifies itself as the sole real party-in-interest. Paper 4, 2.

C. Summary of the '373 Patent (Ex. 1001)

The '373 patent is titled “Light Fixture with Self-Test Ability of Sealing” and describes a light fixture with a head housing, a light source that emits light and generates heat, a temperature sensor, an air pressure sensor and a controller that determines the sealing performance of the head housing based on detecting temperature and air pressure inside the head housing. Ex. 1001, codes (54), (57). The '373 patent’s application, No. 18/322,066, was filed May 23, 2023. *Id.* at codes (21), (22). The '373 patent also identifies foreign priority application, No. CN 202320673598.5 filed March 30, 2023. *Id.* at code (30).

The '373 patent relates to the field of stage light fixtures. Ex. 1001, 1:14–15. The '373 patent explains that light fixtures are used outdoors and various parts of the housings “are sealed by waterproof strips or waterproof glue.” *Id.* at 1:22–23. According to the '373 patent, light fixtures are typically leak tested prior to leaving the factory, but that “is considered as time-consuming and labor-intensive,” and cannot be performed after the light fixtures leave the factory, “due to lack of professional test equipment.” *Id.* at 1:32–35. Because the seals of the light fixture may become damaged due to age or impacts, “there is a need to provide a light fixture which can be subjected to a sealing performance test at any time.” *Id.* at 1:41–42.

The '373 patent discloses a light fixture that can perform a test on the seals at any time, without any external professional test equipment. Ex. 1001, 1:48–52. The light fixture includes a switch that switches between

two states by unblocking/blocking a waterproof breathable valve to enable/disable air to communicate between an internal space of the head housing and an external space of the light fixture. *Id.* at 1:67–2:4. During normal operation, the switch unblocks the valve to enable air to communicate between the internal and external spaces of the light fixture to balance the pressure inside the housing with the air pressure outside the light fixture to avoid damaging “the sealing performance of the head housing caused by the air pressure change due to increase or decrease of the temperature inside the head housing.” *Id.* at 2:10–13. During the sealing performance test, the switch blocks the valve to prevent air communication between the internal and external spaces of the light fixture, causing “heat energy generated by the light source [to] increase the air pressure inside the head housing” so that “the sealing performance of the head housing thus can be determined by the associated controller,” based on a detected change in temperature and air pressure inside the head housing. *Id.* at 2:17–22.

Figure 1 of the '373 patent is reproduced below:

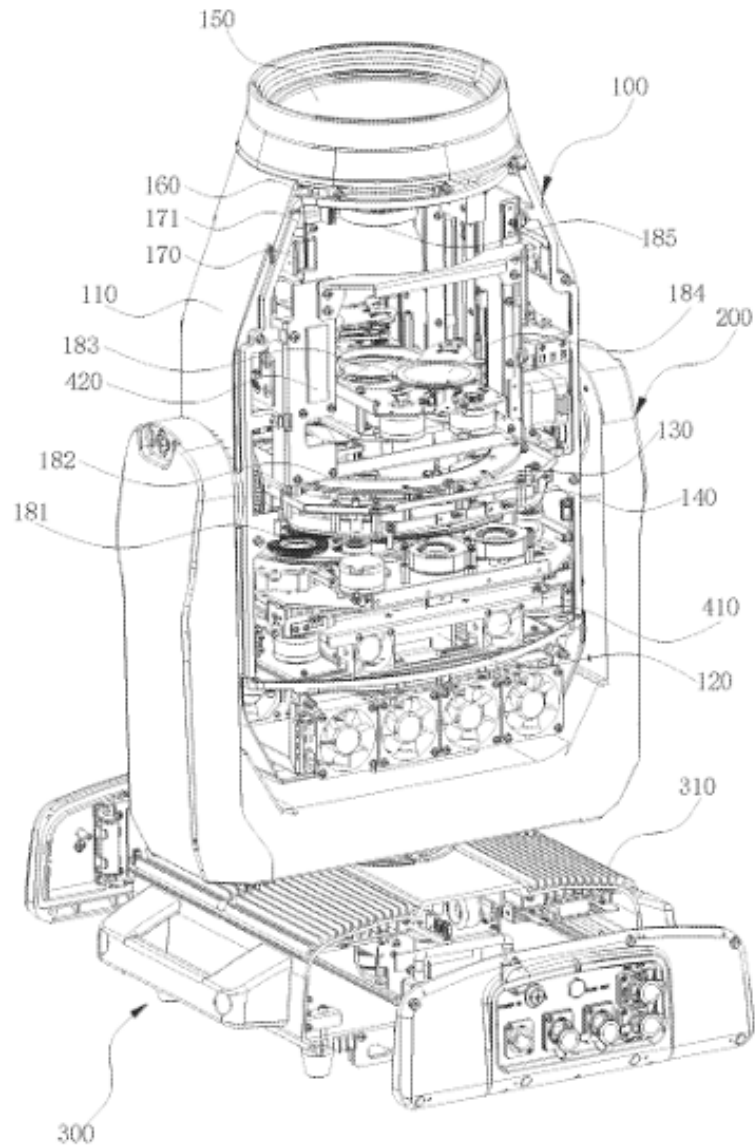


FIG. 1

Figure 1 is a schematic view of a light fixture showing an internal structure of a light head of the light fixture. Ex. 1001, 4:3–5. The light fixture includes light head 100 having head housing 110. *Id.* at 4:30–32. The light fixture also includes light source 120 for emitting light and generating heat, and temperature sensor 130 and air pressure sensor 140 for respectively detecting the temperature and air pressure inside head housing 110. *Id.* at

4:32–35. A controller 500 (not shown in Figure 1) determines the sealing performance of head housing 110 based on the detection results of the temperature and air pressure sensors. *Id.* at 4:36–39. Head housing 110 includes waterproof breathable valve 160 allowing the internal space of head housing 110 to be in air communication with the external space of the light fixture. *Id.* at 4:42–45. Switch 170 unblocks the waterproof breathable valve to make the internal space of the head housing 110 in communication with the external space of the light fixture during normal operation. *Id.* at 4:45–50.

D. Illustrative Claim

Independent claim 1 is reproduced below with Petitioner’s annotations¹:

1. A light fixture with self-test ability of sealing, comprising

[a] a light head having a head housing;

[b] a light source for emitting light and generating heat, which is arranged in the head housing, the light emitted by the light source being projected through a light outlet of the head housing;

[c] a temperature sensor and an air pressure sensor for respectively detecting temperature and air pressure inside the head housing, which are arranged in the head housing; and

[d] a controller configured to determine sealing performance of the head housing based on detection results of the temperature sensor and the air pressure sensor,

[e] wherein the head housing is provided with a waterproof breathable valve allowing an internal space of the head housing

¹ We use Petitioner’s annotations herein for ease of reference.

in air communication with an external space of the light fixture;
and

[f] a switch is further provided, which is configured to make the internal space of the head housing in air communication with the external space of the light fixture by unblocking the waterproof breathable valve when the light fixture is in normal operation, so as to keep air pressure balance between inside and outside of the head housing, and

[g] configured to make the internal space of the head housing not in air communication with the external space of the light fixture by blocking the waterproof breathable valve when the light fixture is in testing of sealing performance.

Ex. 1001, 8:54–9:10.

E. Asserted Grounds of Unpatentability

Petitioner, supported by the Declaration of Mike Wood (Ex. 1004), asserts the following grounds of unpatentability (Pet. 3)²:

Claims Challenged	35 U.S.C. §	References/Basis
1–4, 6, 10, 11	102(a)(2)	Jurik ³
5, 12, 13	103	Jurik
5, 12, 13	103	Jurik, Johansen ⁴
7, 8	103	Jurik
9	102(a)(2)	Jurik
9	103	Jurik, Jurik 2 ⁵

² We apply the AIA version of 35 U.S.C. § 102 and 35 U.S.C. § 103 because the claims at issue have an effective filing date after March 16, 2013, the effective date of the Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”). See Ex. 1001, code (22).

³ Jurik et al., U.S. Pat. 12,085,267 B2, issued September 10, 2024 (Ex. 1005, “Jurik”).

⁴ Johansen, U.S. Pat. 9,777,917 B2, issued October 3, 2017 (Ex. 1013, “Johansen”).

⁵ Jurik, U.S. Pat. App. Pub. 2015/0103553 A1, published April 16, 2015 (Ex. 1006, “Jurik 2”).

II. ANALYSIS

A. Overview

Petitioner bears the burden of persuasion to prove unpatentability of the claims challenged in the Petition, and that burden never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). At this stage of the proceeding, Petitioner bears the burden of demonstrating a reasonable likelihood that it would prevail with respect to at least one challenged claim for a petition to be granted. 35 U.S.C. § 314(a).

To establish anticipation under 35 U.S.C. § 102, each and every element in a claim, arranged as recited in the claim, must be found in a single prior art reference. *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008); *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383 (Fed. Cir. 2001). Each element of the challenged claim must be found, either expressly or inherently, in the single prior art reference. *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987). However, this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *See In re Bond*, 910 F.2d 831, 832 (Fed. Cir. 1990). When evaluating a prior art reference in the context of anticipation, the reference must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (citing *In re Samour*, 571 F.2d 559, 562 (CCPA 1978)).

A claim is unpatentable under § 103 if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a

person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) when in evidence, objective indicia of non-obviousness (i.e., secondary considerations).⁶ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

The Supreme Court explained in *KSR* that

[o]ften, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.

550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” (alteration in original))).

“Whether an ordinarily skilled artisan would have been motivated to modify the teachings of a reference is a question of fact.” *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1327 (Fed. Cir. 2016) (citations omitted).

“[W]here a party argues a skilled artisan would have been motivated to combine references, it must show the artisan ‘would have had a reasonable

⁶ No evidence of secondary considerations has been presented at this stage of the proceeding.

expectation of success from doing so.” *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1360–61 (Fed. Cir. 2017) (quoting *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1068–69 (Fed. Cir. 2012)).

B. Level of Ordinary Skill in the Art

Petitioner asserts that:

[a] person of ordinary skill in the art (“POSITA”) at the time of the assumed effective filing date (March 30, 2023), would have had at least a B.S. degree in mechanical or electrical engineering and would have had at least two years of practical experience designing lighting systems. Alternatively, a POSITA would have at least two years of undergraduate training in a physical science (e.g., engineering or physics) and at least four years of practical experience designing lighting systems.

Pet. 10 (citing Ex. 1004 ¶¶ 31–32).

Patent Owner did not file a Preliminary Response.

For the purposes of this Decision, we apply Petitioner’s currently uncontested definition except for the term “at least” because it may cause ambiguity resulting in potentially encompassing those with more than ordinary skill in the art. With that qualification, Petitioner’s proposal appears consistent with the problems addressed in the ’373 patent and the prior art.

C. Claim Construction

In an *inter partes* review proceeding, a patent claim shall be construed 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) (as amended Oct. 11, 2018). Our rule adopts the same claim construction standard used by Article III federal courts, which follow *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc), and its

progeny. Under this standard, the words of a claim are generally given their “ordinary and customary meaning,” which is the meaning the term would have to a person of ordinary skill at the time of the invention. *See Phillips*, 415 F.3d at 1312–13. In construing claims in accordance with their ordinary and customary meaning, we take into account the specification and prosecution history. *Id.* at 1315–17.

Petitioner submits that there are no “claim construction issues because all claims of the ‘373 Patent are invalid under any reasonable construction.” Pet. 10–11.

Patent Owner did not file a Preliminary Response.

We determine, at this stage of the proceeding, that we need not construe any claim terms to resolve the controversy before us. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only 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))).

The parties are free to address the construction of any claim term in subsequent authorized briefing during trial. If either party chooses to present claim construction arguments, the arguments should be in a separately delineated portion of the brief labelled accordingly.

D. Anticipation of Claims 1–4, 6, 10, and 11 by Jurik

Petitioner contends that claims 1–4, 6, 10, and 11 are anticipated by Jurik. Pet. 17–41. Petitioner supports its contentions with the Declaration of Mr. Wood. Ex. 1004. Patent Owner did not file a Preliminary Response.

We begin with a summary of Jurik and then address Petitioner’s contentions for independent claim 1.

1. *Jurik (Ex. 1005)*

Jurik is a patent titled “System and Method for Controlling the Humidity and Pressure in a Luminaire.” Ex. 1005, code (54). Petitioner is identified as the applicant and assignee of the Jurik patent. *See id.* at codes (71) and (73).

Jurik indicates luminaires “are commonly used in theatres, television studios, concerts, theme parks, night clubs, and other venues.” Ex. 1005, 1:29–31. Jurik’s method controls the humidity and pressure inside a luminaire. *Id.* at 1:20–22. According to Jurik, if luminaires are used outdoors or otherwise subject to moisture and humidity they may include “sealed housings or semi-sealed housings with pressure equalization.” *Id.* at 2:55–56. Jurik explains that such fixtures generate heat that causes the temperature inside the fixture to rise, which “produces a corresponding increase in the air pressure within the luminaire.” *Id.* at 2: 61–62. Pressure increases within the luminaire can be significant, requiring repair and maintenance of the seals, which may be expensive and difficult, and without which may lead to damage or degradation of the luminaire mechanisms and optical system. *Id.* at 2:63–3:3. In some sealed fixtures, the pressure is allowed to escape through pressure relief valves but this may allow moisture to be drawn back into the luminaire through the seals, when the fixture cools, leading to damaging condensation or degradation of the luminaire. *Id.* at 3:4–13. To address this, Jurik’s luminaires “are sealed, but also are vented to the outside air through a system that removes excess humidity from incoming air and reduces condensation within the luminaire.” *Id.* at 3:14–17

Jurik’s Figure 7 is reproduced below:

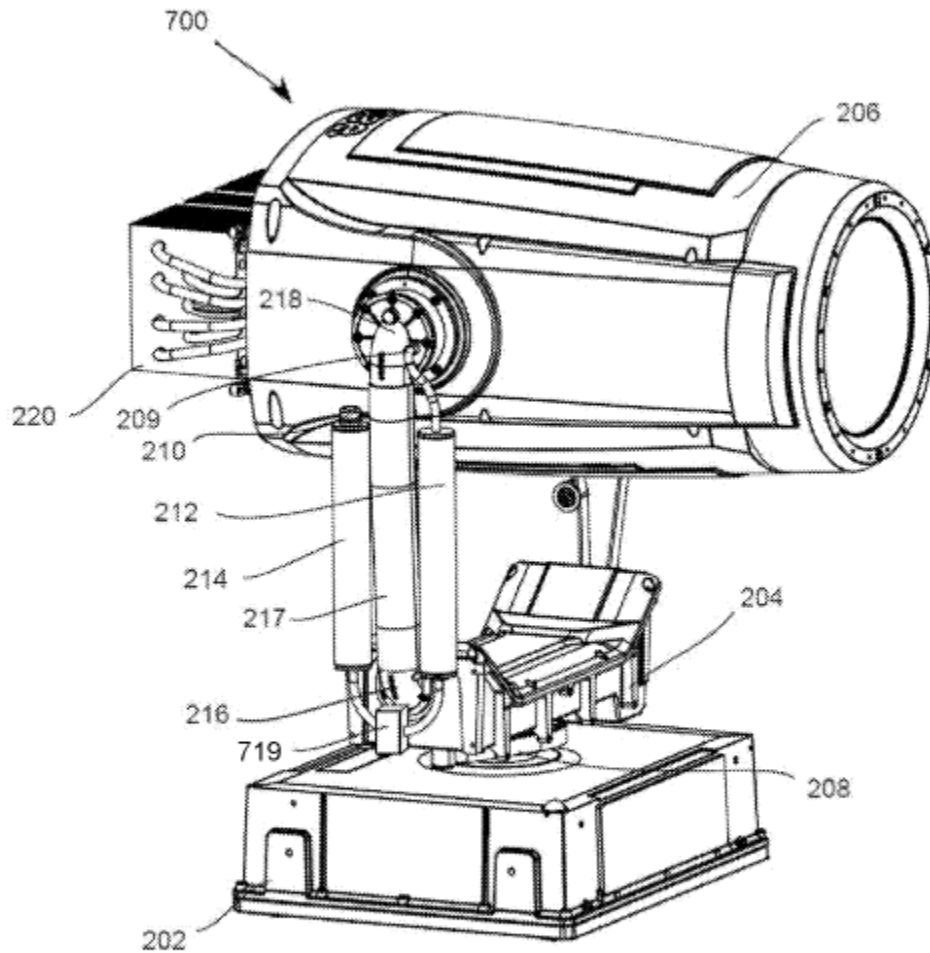


FIGURE 7

Figure 7 illustrates a view of a luminaire having a humidity and pressure control system. Ex. 1005, 1:63–64.

Luminaire 700 includes base enclosure 202, motor enclosure 204, and head enclosure 206. Ex. 1005, 4:11–12. Light source 220 is located within head enclosure 206 to “produce and modify a light beam that is emitted from the head enclosure 206.” *Id.* at 4:26–28. Although enclosures 202, 204, and 206 are sealed from external air such that external air does not pass through

the seals, they are connected together and vented through drying tubes 212 and 214 that allow air to flow into and out of the enclosures. *Id.* at 4:52–56. This prevents an internal air pressure in the enclosures 202, 204, and 206 from rising significantly above or going below an external atmospheric pressure, “thereby reducing pressure on the seals of the enclosures.” *Id.* at 4:59–60.

Motor enclosure 204 is vented to head enclosure 206 through pipe 217, which has a sealed air coupling at first end 216 to an opening in the motor enclosure 204 and a rotating sealed air coupling at second end 218 to an opening in the head enclosure 206. Ex. 1005, 5:16–20. “The pipe 217 is configured to pass air from the motor enclosure 204 to the head enclosure 206 through the rotating tilt system on the side of the head enclosure 206.” *Id.* at 5:20–23. Enclosures 202, 204, and 206 are connected together by pipes 208 and 217 to form a combined enclosure having pressure and humidity control. *Id.* at 5:24–26. The combined enclosure is vented to the external air through vent pipe 209 via an opening in head enclosure 206. *Id.* at 5:26–28. Vent pipe 209 has a sealed air coupling at an end of a drying tube (or chamber) 212, which is sealed air coupled to drying tube 214. *Id.* at 5:30–33. An exit opening of drying tube 214 includes membrane 210 that couples drying tube 214 to the external air. *Id.* at 5:35–37. Membrane 210 has a hydrophobic membrane material that allows air to pass through, but reduces or prevents the passage of water and/or moisture in the form of water droplets. *Id.* at 5:38–43. The head enclosure includes a sensor that “measures one or more parameters such as air pressure, air humidity, or air temperature.” *Id.* at 7:41–43.

Jurik’s humidity and pressure control system “includes a remotely operable air valve 719 configured to pass air when open and block air passage when closed.” Ex. 1005, 9:49–51. As depicted in Figure 7, valve 719 is positioned between drying tubes 212 and 214, so that when closed, it blocks air passage between the connected enclosures 202, 204, and 206. *Id.* at 9:51–55. The connected enclosures 202, 204, and 206 are vented to the outside air through valve 719, and the control system of the luminaire opens and closes valve 719. *Id.* at 9:56–61.

“[V]alve 719 may be operated to seal the connected enclosures 202, 204, and 206 from the outside air so that pressure changes in one or more of the connected enclosures 202, 204, and 206 may be measured.” Ex. 1005, 10:45–49. This measurement provides a test of whether the seals of the connected enclosures 202, 204, and 206 are adequately air-tight to permit the luminaire’s humidity and pressure control system to function as designed to reduce water ingress into the luminaire. *Id.* at 10:49–53. Jurik explains that a seal test may be run when luminaire 700 is first built to confirm that the luminaire has been properly assembled, or may also be run after maintenance is performed on the luminaire. *Id.* at 10:54–57. The test may be initiated by a control signal (such as a command) that is received via a data link or via an input panel of the luminaire. *Id.* at 10:62–64.

2. *Claim 1*

Petitioner provides a limitation-by-limitation analysis of independent claim 1, mapping each claim limitation to Jurik. Pet. 18–29.

Because Petitioner bears the burden to establish a reasonable likelihood that at least one claim of the ’373 patent is unpatentable, we analyze Petitioner’s asserted mapping of claim 1 to the disclosure of Jurik.

- i. [preamble] “A light fixture with self-test ability of sealing, comprising”

Petitioner contends Jurik discloses the subject matter of the preamble because “Jurik’s ‘luminaire’ (luminaire 200/700 as depicted in Figures 2, 3, 5, and 7) is a ‘light fixture’” that is “configured to self-test its sealing capability.” Pet. 18–19 (citing Ex. 1004 ¶ 70; Ex. 1005, 1:26–42, 4:19–28, 4:52–63, 5:24–46, 6:59–7:9, 10:43–12:60, Fig. 10).

We have reviewed Petitioner’s contentions and evidence and find, on the present record at this stage of the proceeding, Petitioner sufficiently establishes that Jurik discloses the subject matter of the preamble. Consequently, we need not address whether the preamble of claim 1 is limiting.

- ii. [1a] “a light head having a head housing”

Petitioner provides the following annotated version of Jurik’s Figures 3 and 7 (Pet. 20):

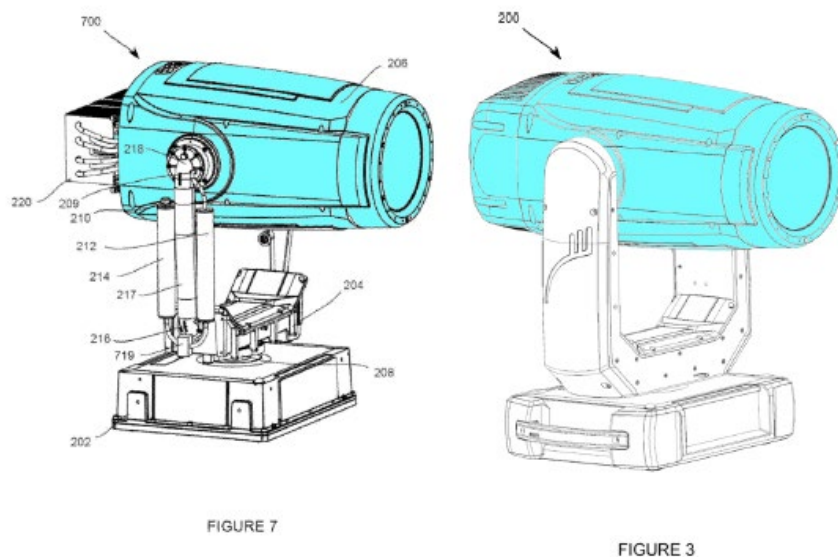


Figure 3, on the right, and Figure 7 on the left are side views of Jurik’s luminaire embodiments. Ex. 1005, 1:53–54, 1:63–65. Petitioner annotates

Figures 3 and 7 by highlighting in blue the element that it contends corresponds to the recited “head housing.” Pet. 20.

Petitioner contends that Jurik’s luminaire 200/700 “includes a head with a head housing (head enclosure 206/406).” Pet. 19–20 (citing Ex. 1004 ¶ 71; Ex. 1005, 4:4–34, 7:10–29, 9:56–67, Figs. 3, 7).

We have reviewed Petitioner’s contentions and evidence and find that, on the present record at this stage of the proceeding, Petitioner sufficiently establishes that Jurik discloses this limitation.

- iii. [1b] “a light source for emitting light and generating heat, which is arranged in the head housing, the light emitted by the light source being projected through a light outlet of the head housing”*

Petitioner contends Jurik discloses that “light source 220 may be located within the head enclosure 206 or may be external to, but optically coupled with, the head enclosure 206 ... The light source 220 and the luminaire components produce and modify a light beam that is emitted from the head enclosure 206.” Pet. 20 (quoting Ex. 1005, 4:22–28; citing Ex. 1004 ¶ 72).

We have reviewed Petitioner’s contentions and evidence and find that, on the present record at this stage of the proceeding, Petitioner sufficiently establishes that Jurik discloses this limitation.

- iv. [1c] “a temperature sensor and an air pressure sensor for respectively detecting temperature and air pressure inside the head housing, which are arranged in the head housing; and”*

Petitioner provides the following annotated version of Jurik’s Figure 8 (Pet. 22):

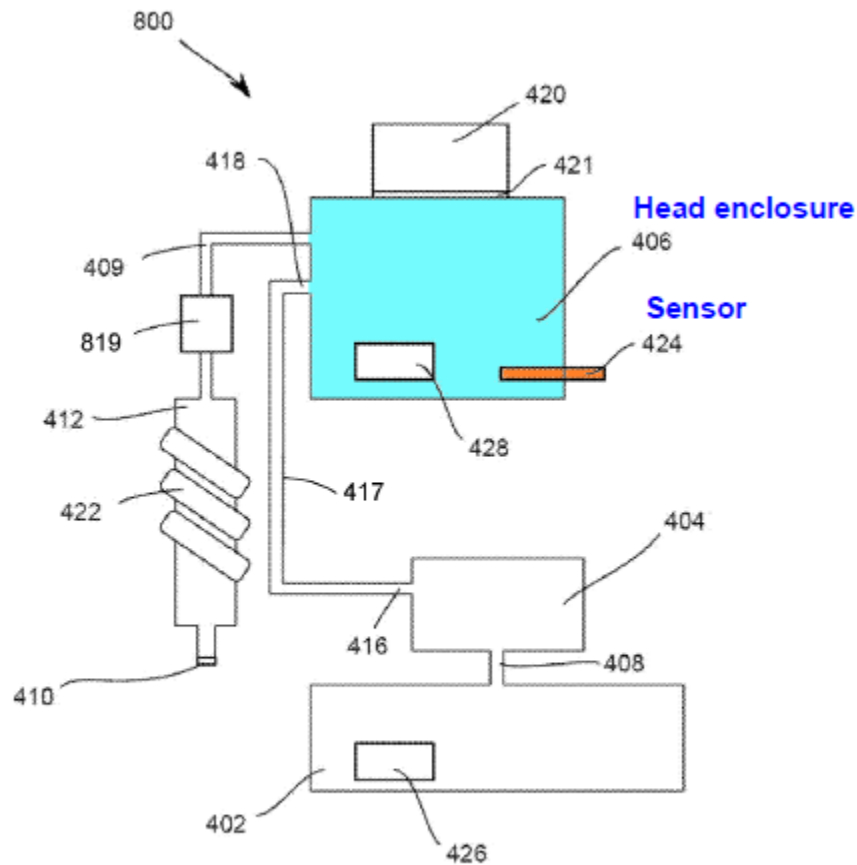


FIGURE 8

Figure 8 is “a schematic view of the second luminaire humidity and pressure control system.” Ex. 1005, 1:66–67. Petitioner annotates Figure 8 by highlighting element 406 in blue, highlighting element 424 in orange, adding blue text “Head enclosure” over element number 406, and adding blue text “Sensor” over element number 424. Pet. 22.

Petitioner contends Jurik discloses that “enclosures 202, 204, and 206 may include one or more sensors that are configured to measure characteristics of the enclosure, where the characteristics are selected from, but not limited to, air pressure, air humidity, and/or air temperature.” Pet. 21 (quoting Ex. 1005, 6:28–32) (emphasis by Petitioner). Petitioner also contends Jurik discloses that “head enclosure 406 includes a sensor 424 that

measures one or more parameters such as air pressure, air humidity, or air temperature.” *Id.* at 21–22 (citing Ex. 1004 ¶ 74; quoting Ex. 1005, 7:40–47, Fig. 8).

We have reviewed Petitioner’s contentions and evidence and find that, on the present record at this stage of the proceeding, Petitioner sufficiently establishes that Jurik discloses this limitation.

- v. *[Id]* “a controller configured to determine sealing performance of the head housing based on detection results of the temperature sensor and the air pressure sensor”

Petitioner asserts that because neither the ’373 patent nor its prosecution history disclose a specific structure for a controller, “the claimed ‘controller’ should have its plain and ordinary meaning.” Pet. 23 (citing Ex. 1004 ¶ 74). According to Petitioner, Jurik’s “control system” corresponds to the recited controller, because it “may determine, based on data from such sensors, whether the sealed enclosures have been effectively sealed (or re-sealed after maintenance).” *Id.* (citing Ex. 1004 ¶ 75; Ex. 1005, 6:59–62). Petitioner asserts that Jurik refers to its control system as a “controller.” *Id.* (citing Ex. 1005, 8:61–62). Petitioner explains that Jurik’s control system is configured to automatically perform a test to determine the sealing performance of the head housing based on the temperature sensor and the air pressure sensor, as set forth in the algorithms of Jurik’s Figures 9 and 10. *Id.* at 23–24 (citing Ex. 1004 ¶ 77; Ex. 1005, 10:62–12:45, Figs. 9, 10).

We have reviewed Petitioner’s contentions and evidence and find that, on the present record at this stage of the proceeding, Petitioner sufficiently establishes that Jurik discloses this limitation.

- vi. [1e] “wherein the head housing is provided with a waterproof breathable valve allowing an internal space of the head housing in air communication with an external space of the light fixture; and”

Petitioner asserts that Jurik’s membrane 210 corresponds to the recited “waterproof breathable valve.” Pet. 25 (citing Ex. 1004 ¶ 80).

Petitioner provides the following annotated version of Jurik’s Figure 8 (Pet. 26):

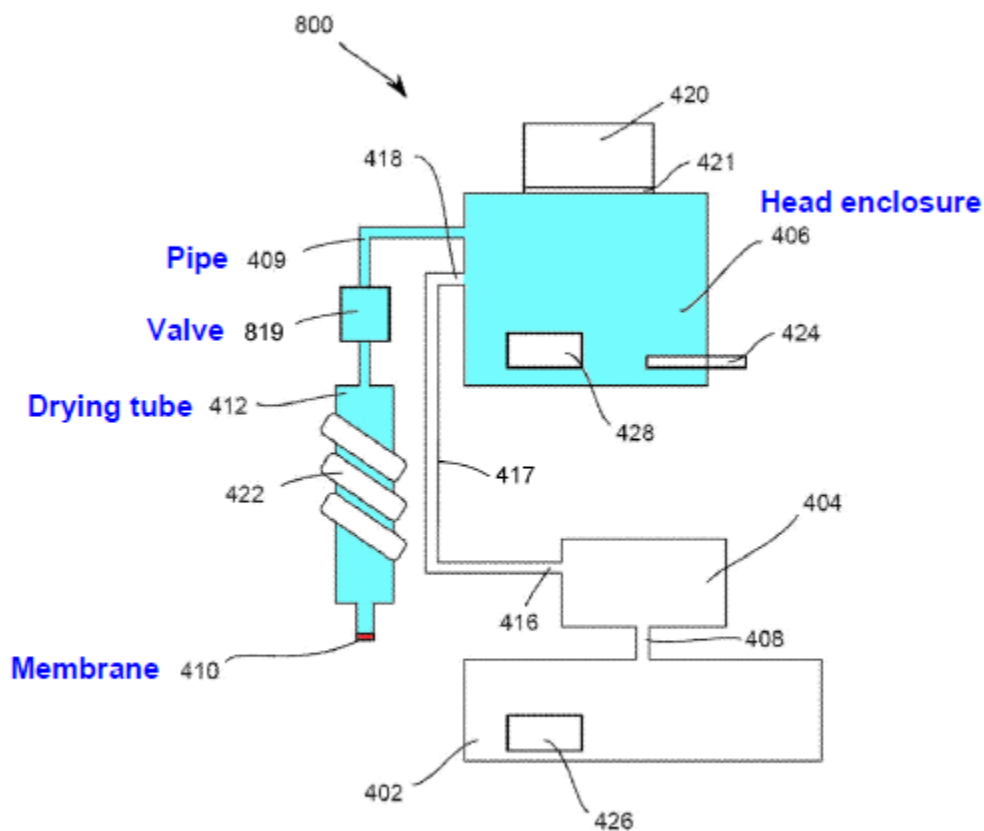


FIGURE 8

Figure 8 is “a schematic view of the second luminaire humidity and pressure control system.” Ex. 1005, 1:66–67. Petitioner annotates Figure 8 by highlighting elements 406, 409, 819, and 412 in blue, highlighting element 410 in orange, adding blue text “Head enclosure” over element number 406, adding blue text “Pipe” next to element number 409, adding blue text

“Valve” next to element 819, adding blue text “Drying tube” next to element 412, and adding blue text “Membrane” next to element 410. Pet. 26.

Petitioner contends that Jurik’s “pipe 409 exits the head enclosure 406 and thereby provides a path to vent the head enclosure 406 to the external space or atmosphere,” through drying tube 412. Pet. 25 (citing Ex. 1005, Fig. 8). Petitioner further contends that the “terminal end of the drying tube 412 is covered by membrane 410 which permits air to escape from the internal space of the head enclosure 406,” “the membrane 410 also reduces or prevents moisture from entering the drying tube 412, valve 819, pipe 409, and head enclosure 406,” and “membrane 410 may be made from hydrophobic material such as GORE-TEX®.” *Id.* at 25–26 (citing Ex. 1004 ¶ 80; Ex. 1005, 5:35–44, 7:25–32, 10:18–38).

We have reviewed Petitioner’s contentions and evidence and find that, on the present record at this stage of the proceeding, Petitioner sufficiently establishes that Jurik discloses this limitation.

- vii. *[1f] “a switch is further provided, which is configured to make the internal space of the head housing in air communication with the external space of the light fixture by unblocking the waterproof breathable valve when the light fixture is in normal operation, so as to keep air pressure balance between inside and outside of the head housing, and”*

Petitioner asserts that the ’373 patent describes “switch 170 is preferably in [the] form of an electromagnetic valve with is connected with the waterproof breathable valve 160 via an air guide pipe 171.” Pet. 27 (citing Ex. 1001, 8:36–38). Petitioner contends that Jurik discloses “valve 719/819,” which is “an electromagnetic valve” that “is open during normal operation to vent the head enclosure 406 and is closed during testing to seal

enclosure 406.” *Id.* (citing Ex. 1004 ¶ 82; Ex. 1005, 9:46–61, 10:24–33, 10:43–53, 11:4–12:23, Fig. 8).

We have reviewed Petitioner’s contentions and evidence and find that, on the present record at this stage of the proceeding, Petitioner sufficiently establishes that Jurik discloses this limitation.

viii. [1g] “configured to make the internal space of the head housing not in air communication with the external space of the light fixture by blocking the waterproof breathable valve when the light fixture is in testing of sealing performance.”

Petitioner contends that when Jurik’s

seals are functioning as intended, air flows into and out of the connected enclosures 202, 204, and 206 only through the valve 719. Thus, when the valve 719 is closed, if air flows into or out of the connected enclosures 202, 204, and 206, it may be assumed that it is flowing through the seals . . . This enables self-testing the sealing performance.

Pet. 28 (citing Ex. 1004 ¶ 83; Ex. 1005, 9:61–67). Petitioner further contends that when Jurik’s valve 719/819 “is closed for testing,” air is “prevented from escaping the head enclosure 406 through the membrane 410 to the external space of the light fixture.” *Id.* (citing Ex. 1004 ¶ 84; Ex. 1005, 10:43–53, 11:31–32, Fig. 9).

We have reviewed Petitioner’s contentions and evidence and find that, on the present record at this stage of the proceeding, Petitioner sufficiently establishes that Jurik discloses this limitation.

ix. Summary of Claim 1

For all the foregoing reasons, Petitioner establishes a reasonable likelihood that claim 1 is anticipated by Jurik.

3. *Claim 2*

Claim 2 depends from claim 1 and recites “wherein an effect assembly is further provided inside the head housing, which is configured to receive the light emitted by the light source and generate a light effect.” Ex. 1001, 9:11–14.

Petitioner contends that the head of Jurik’s luminaire “comprises an optical system comprising one or more luminaire mechanisms, each of which includes one or more optical devices such as gobo wheels, effects wheels, and color mixing (or other color changing) systems, as well as prism, iris, shutter and lens movement systems.” Pet. 30 (citing Ex. 1005, 3:60–65). According to Petitioner, “[t]hese effect assemblies are all well understood, even by persons of only basic skill in the art, to receive the light emitted by a light source and generate a light effect.” *Id.* (citing Ex. 1004 ¶ 88).

We have reviewed Petitioner’s contentions and evidence and find that, on the present record at this stage of the proceeding, Petitioner sufficiently establishes that Jurik discloses the limitations of claim 2.

Petitioner, thus, establishes a reasonable likelihood that claim 2 is anticipated by Jurik.

4. *Claim 3*

Claim 3 depends from claim 1 and recites “wherein a light shielding member for intercepting the light emitted by the light source is provided to improve efficiency of heating the inside of the head housing when the internal space of the head housing is isolated from the external space of the light fixture.” Ex. 1001, 9:15–20.

Petitioner contends that step 4 in the processes shown in Jurik’s Figures 9 and 10 “is to ‘[i]ncrease the temperature within the connected enclosures 202, 204, and 206 [head enclosure] by activating one or more heat-generating components of the luminaire 700.’” Pet. 33 (citing Ex. 1005, 11:35–37). Petitioner further contends that “[d]uring this heating step of the process, ‘a framing shutter or other light-blocking optical device may be engaged to prevent luminaire 700 from projecting a light beam.’” *Id.* (citing Ex. 1005, 11:45–48). Petitioner also contends that Jurik’s “iris” and “shutter” “are stereotypical examples of structures that directly reduce or block the light emitted [from] the luminaire head.” *Id.* (citing Ex. 1004 ¶ 94).

We have reviewed Petitioner’s contentions and evidence and find that, on the present record at this stage of the proceeding, Petitioner sufficiently establishes that Jurik discloses the limitations of claim 3.

Petitioner, thus, establishes a reasonable likelihood that claim 3 is anticipated by Jurik.

5. *Claim 4*

Claim 4 depends from claim 1 and recites “[4a] a support arm for supporting the light head to rotate, and [4b] a base for supporting the support arm, the base having a base housing.” Ex. 1001, 9:22–24.

Petitioner provides the following annotated version of Jurik's Figures 3 and 7 (Pet. 36):

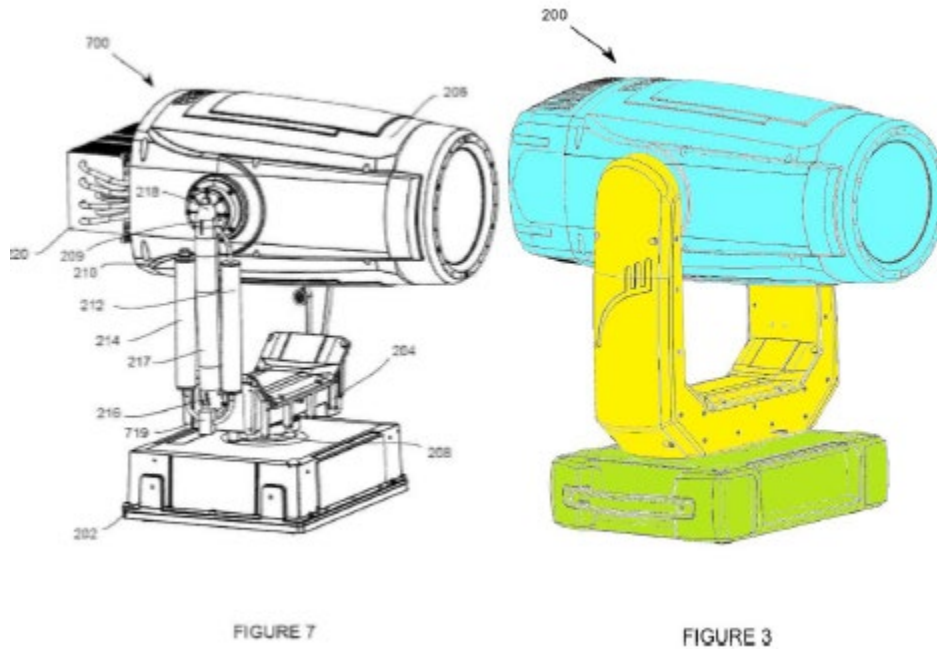


Figure 3, on the right, is a view of Jurik's luminaire in an assembled state and Figure 7 is a view of a second embodiment of Jurik's luminaire. Ex. 1005, 1:56–57, 1:63–65. Petitioner annotates Figure 3 with blue highlighting of the luminaire head, green highlighting on the bottom structure, and yellow highlighting on vertical arms connecting the head and the bottom structure. Pet. 36.

For limitation [4a], Petitioner contends that Jurik discloses base enclosure 202 that is fixed on a supporting structure, and motor enclosure 204 comprising motors that pan or tilt the luminaire head. Pet. 35 (citing Ex. 1005, 4:11–33. According to Petitioner, Jurik's pan direction corresponds to the recited "rotation" and "motor enclosure 204/404 and vertical pipe and tubes 212, 214, and 217 form the shape of a support arm

for supporting the head enclosure 206/406 to rotate” as shown in yellow in annotated Figure 3. *Id.* 35–36 (citing Ex. 1004 ¶ 98).

For limitation [4b], Petitioner contends that Jurik’s “base enclosure 202/402 rests on a supporting structure (such as a stage) and remains stationary,” “houses power supplies, interface electronic circuits, and other control equipment,” and “with its attached pipe and tubes 212, 214, and 217 . . . form a support arm. Pet. 36–37 (citing Ex. 1005, 4:17–19, 4:28–33).

We have reviewed Petitioner’s contentions and evidence and find that, on the present record at this stage of the proceeding, Petitioner sufficiently establishes that Jurik discloses the limitations of claim 4.

Petitioner, thus, establishes a reasonable likelihood that claim 4 is anticipated by Jurik.

6. *Claim 6*

Claim 6 depends from claim 4 and recites “wherein a pipeline is configured to communicate the head housing with the base housing, with a joint therebetween sealed.” Ex. 1001, 10:8-10.

Petitioner provides the following annotated version of Jurik's Figure 8:

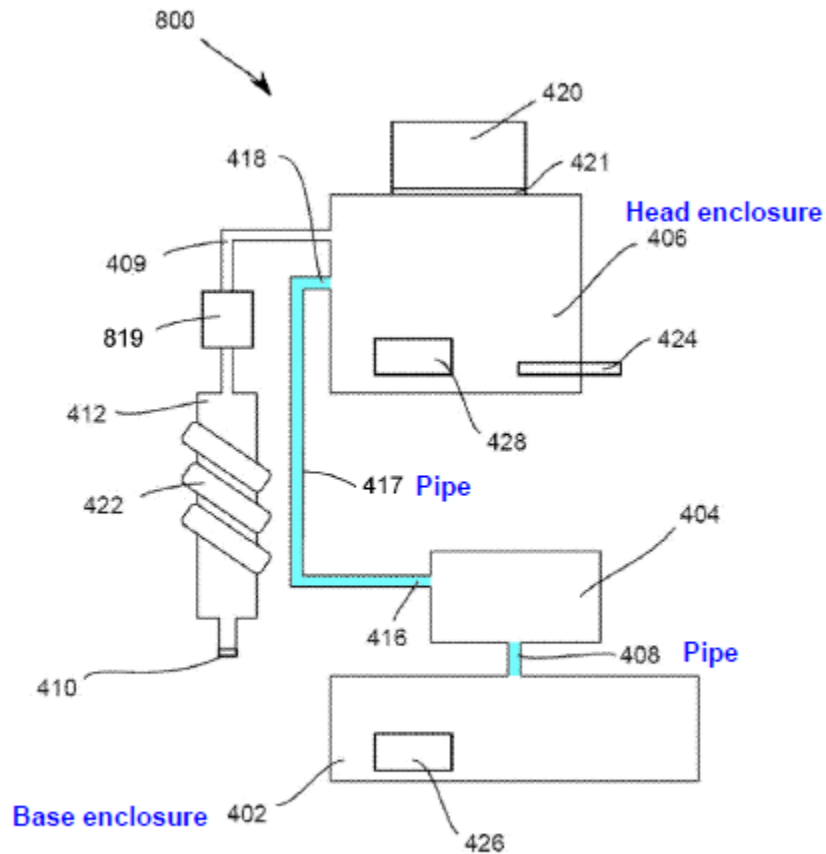


FIGURE 8

Pet. 38. Figure 8 is a schematic view of Jurik's "second luminaire humidity and pressure control system." Ex. 1005, 1:66–67. Petitioner annotates Figure 8 with blue highlighting of elements 408 and 417, adding blue text "Pipe" next to elements 408 and 417, adding blue text "Head enclosure" above element 406, and adding blue text "Base enclosure" next to element 402. Pet. 38.

Petitioner contends that "[p]ipes 208/408 and 217/417 in Jurik form a pipeline configured to communicate a head housing (head enclosure 206/406) with a base housing (base enclosure 202/402), with a joint

therebetween sealed (‘rotating sealed air coupling’).” Pet. 37–38 (citing Ex. 1004 ¶ 104; Ex. 1005, 4:60–5:23).

We have reviewed Petitioner’s contentions and evidence and find that, on the present record at this stage of the proceeding, Petitioner sufficiently establishes that Jurik discloses the limitations of claim 6.

Petitioner, thus, establishes a reasonable likelihood that claim 6 is anticipated by Jurik.

7. *Claim 10*

Claim 10 depends from claim 1 and recites “wherein an auxiliary heating assembly is further provided in the head housing.” Ex. 1001, 10:22–24.

Petitioner contends that Jurik “discloses several heat-generating components that are used in the self-test procedure, including a light source 220 located in the head enclosure 206/406 and a standalone heating element located in any or all of the connected enclosures.” Pet. 39 (citing Ex. 1004 ¶ 118); *id.* at 39–40 (citing Ex. 1005, 11:35–48).

We have reviewed Petitioner’s contentions and evidence and find that, on the present record at this stage of the proceeding, Petitioner sufficiently establishes that Jurik discloses the limitations of claim 10.

Petitioner, thus, establishes a reasonable likelihood that claim 10 is anticipated by Jurik.

8. *Claim 11*

Claim 11 depends from claim 1 and recites “wherein the switch is in form of an electromagnetic valve.” Ex. 1001, 10:25–26.

Petitioner points to disclosure in Jurik that valve 719 may be an electromagnetic valve. Pet. 40–41 (citing Ex. 1005, 9:58–67).

We have reviewed Petitioner's contentions and evidence and find that, on the present record at this stage of the proceeding, Petitioner sufficiently establishes that Jurik discloses the limitations of claim 11.

Petitioner, thus, establishes a reasonable likelihood that claim 11 is anticipated by Jurik.

E. Petitioner's Remaining Challenges

Because we have determined that Petitioner has shown a reasonable likelihood that it would prevail in establishing that at least one challenged claim of the '373 patent is unpatentable, we do not reach the Petitioner's remaining challenges at this time.

III. CONCLUSION

Based on the present record, we determine that Petitioner demonstrates a reasonable likelihood that it would prevail in establishing that at least one challenged claim of the '373 patent is unpatentable. We, thus, institute an *inter partes* review of all challenged claims of the '373 patent based on all grounds in the Petition. At this stage of the proceeding, we have not made a final determination under 35 U.S.C. § 318(a) with respect to the unpatentability of any challenged claim.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of the '373 patent is instituted with respect to all Challenged Claims and the grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(a) and 37 C.F.R. § 42.4(b), *inter partes* review of the '373 patent shall commence

IPR2025-01016
Patent 11,988,373 B1

on the entry date of this Order, and notice is hereby given of the institution
of a trial.

IPR2025-01016
Patent 11,988,373 B1

PETITIONER:

Thomas Warden
Brooks Taylor
CONLEY ROSE, P.C.
twarden@conleyrose.com
bwtaylor@dfw.conleyrose.com

PATENT OWNER:

Philip Riley
Lei Mei
Guang-Yu Zhu
MEI & MARK LLP
ariley@meimark.com
mei@meimark.com
gzhu@meimark.com