
UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HYUNDAI MOTOR AMERICA INC.
Petitioner,

v.

GERM DOME INDUSTRIES LLC
Patent Owner.

PGR2026-00030
Patent No. 12,296,061

PATENT OWNER PRELIMINARY RESPONSE

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PATENT OWNER'S EXHIBIT LIST

Exhibit Number	Description
2001	Declaration of Steven Susser
2002	Revised Declaration of Steven Susser
2003	Defendant Hyundai Motor America's Certification of Conflicts and Interested Entities or Persons
2004	Defendant Hyundai Motor America's Memorandum of Points and Authorities in Support of Motion to Dismiss Under Fed. R. Civ. P. 12(b)(6)
2005	Order Denying Defendant's Motion to Dismiss
2006	Complaint against Genesis Motor America
2007	Order Granting Defendant's Motion to Stay Case Pending Post-Grant Review
2008	Order Granting Joint Stipulation to Stay Case Pending Post-Grant Review
2009	Declaration of Dean Schumacher
2010	Data from United States Patent and Trademark Office Open Data Portal resulting from search for "Hyundai" retrieved May 22, 2026
2011	Excerpt from Concise Oxford American Dictionary
2012	Excerpt from Merriam Webster's Collegiate Dictionary

I. INTRODUCTION AND BACKGROUND

Patent Owner Germ Dome Industries LLC (“Germ Dome”) is a small Michigan company. Germ Dome’s owner, Dean Schumacher, is the inventor of the patent challenged in Petitioner Hyundai Motor America’s (“Hyundai”) Petition for Post Grant Review (“Petition”), U.S. Patent No. 12,296,061 (“the ‘061 Patent,” Ex. 1001).

In 2011, years before the Covid Pandemic brought sanitization to the forefront, Mr. Schumacher came up with an idea to sanitize high-traffic points of contact like doorknobs and elevator buttons. [Ex. 1001, 1:27-51.] This idea led to the family of patents that includes the ‘061 Patent.

Nearly 15 years later, many companies have brought sanitizing devices to the market. One of these companies is Hyundai. Hyundai is a subsidiary of Hyundai Motor Company, a publicly traded Korean company that is one of the world’s largest automakers. [Exhibit 2003, Defendant Hyundai Motor America’s Certification of Conflicts and Interested Entities or Persons.] In November 2025, Germ Dome sued Hyundai for patent infringement in the Central District of California, case no. 8:25-cv-02593 (“California Litigation,” Ex. 1015). Hyundai responded by filing a motion to dismiss Germ Dome’s Complaint on 35 U.S.C. § 101 grounds, which was denied. [Exhibit 2004, Memorandum of Law in Support

of Hyundai's Motion to Dismiss; Exhibit 2005, Order Denying Hyundai's Motion to Dismiss.]

In April 2026, Germ Dome also sued Hyundai's affiliate, Genesis Motor America, for infringement of the '061 Patent in the Central District of California, case no. 8:26-cv-000890 ("Genesis Litigation"). [Exhibit 2006, Complaint against Genesis Motor America.] Both cases are currently stayed pending resolution of this action. [Exhibit 2007, Order Staying California Litigation; Exhibit 2008, Order Staying Genesis Litigation.]

Hyundai's Petition is ripe for discretionary denial under the Director's recent decision in *Magnolia Medical Technologies, Inc. v. Kurin, Inc.*, IPR2026-00097, Paper 17 at 8-9 (Director May 14, 2026) (precedential). Germ Dome is an American small business while Hyundai is the subsidiary of a colossal Korean company; further, Hyundai's actions indicate litigation gamesmanship rather than an attempt to efficiently resolve Germ Dome's allegations of infringement against Hyundai by filing the instant Petition.

If the Director elects to reach the merits of the Petition, the Petition fails because Hyundai applies a purported plain and ordinary meaning for the term "integral" that contradicts the Specification of the '061 Patent. This is fatal to Hyundai's Petition because all claims of the '061 Patent recite an Integral Feature

and when the correct construction of “integral” is applied, the cited prior art references fail to teach the Integral Feature.

In addition, Hyundai refers to the declaration of its expert as factual support for various arguments, but the expert declaration merely parrots the Petition itself and should be given little weight, leaving Hyundai with no support for multiple of its assertions. *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 (PTAB Aug. 24, 2022) (precedential). Hyundai also presents two mutually exclusive interpretations of its primary reference, Watanabe, one of which is only workable if the wrong interpretation of “integral” is applied and the other of which cannot be squared with claims requiring “posterior” and “anterior” walls. Finally, both Hyundai and its expert ignore explicit teachings about safety goals in Watanabe concerning protecting a user’s eyes from sanitizing light, which undermines Hyundai’s obviousness arguments.

This Patent Owner Preliminary Response will first address the reasons for discretionary denial, then turn to the merits of the Petition.

II. DISCRETIONARY DENIAL

This proceeding warrants discretionary denial based on the Director’s precedential decision in *Magnolia Medical Technologies, Inc. v. Kurin, Inc.*, IPR2026-00097 (Director May 14, 2026), issued just 12 days before this POPR is filed. *Magnolia* is the first opinion addressing points raised in the Director’s

Memorandum entitled “Additional Discretionary Institution Considerations – U.S. Manufacturing and Small Business Use of AIA Proceedings.” Although Germ Dome did not file a discretionary denial brief, Germ Dome requests consideration of the discretionary denial issues presented in this section based on the new authority presented in *Magnolia*.

In *Magnolia*, the Director raised concerns that while AIA proceedings were meant to protect American manufacturers and small businesses, data shows that AIA proceedings are largely utilized by market dominant companies. *Magnolia Medical Technologies*, Paper 17 at 8-9. In this case, Germ Dome is a small American business owned and operated by the sole inventor of the ‘061 Patent, Dean Schumacher. [Exhibit 2009, Declaration of Dean Schumacher at ¶¶ 2-7.] Mr. Schumacher self-funded Germ Dome and patented two ideas for sanitizing objects. One of these ideas is the subject of the ‘061 Patent family, which while not commercialized by Germ Dome, has been licensed and is being commercialized by a third party since late 2025. [*Id.* at ¶ 24¹.]

¹ The license agreement is confidential, but it has been provided to Hyundai’s counsel as part of the California litigation under the Protective Order issued in that case. A copy of the license agreement can be produced in this proceeding upon entry of a Protective Order.

The other of Mr. Schumacher’s ideas is the subject of a second patent family that has been commercialized and is currently available for purchase from Germ Dome. [*Id.* at ¶ 7.] Germ Dome is not a non-practicing entity, as Hyundai asserts; rather, it is a small American business attempting to use the United States patent system to protect its idea from being unlawfully used by others.

On the other hand, Hyundai is a subsidiary of a Korean company that is one of the largest automakers in the world. [Ex. 2003.] This case is an example of a market dominant company using an AIA proceeding against a small American business. While Hyundai is not in the top ten petitioners as reported in the PTAB 2025 Intelligence Report cited in *Magnolia*, Hyundai has filed a sizeable number of AIA proceedings—42 since 2013 against ten unique patent owners. [Exhibit 2010, data from United States Patent and Trademark Office Open Data Portal resulting from search for “Hyundai” retrieved May 22, 2026.] Nine of these proceedings were filed in the last five years. [*Id.*]

Further, Hyundai appears to be using this particular AIA review to gain a tactical advantage over Germ Dome. In *Magnolia*, the Director noted concerns over AIA reviews complicating rather than simplifying litigation where petitioners raise parallel validity challenges in district court and at the Office. *Magnolia Medical Technologies*, Paper 17 at 4. That is what happened here: Hyundai filed a motion to dismiss the California litigation on § 101 grounds on January 14, 2026.

[Ex. 2004.] Just one month later, while that motion was still pending, Hyundai filed the instant Petition, forcing Germ Dome to fight Hyundai's attacks in two separate forums. If Hyundai truly believed this AIA proceeding to be a quick and cost-effective alternative to district court litigation—the stated purpose of AIA reviews—it would have included its § 101 challenge in its Petition. Instead, Hyundai mounted a defense in **both** the district court and the PTAB at nearly the same time.

Denial of Hyundai's PGR will not prejudice Hyundai as Hyundai can continue to use its vast resources to challenge the validity of the '061 Patent in the California Litigation. As noted in *Magnolia*, "private litigants retain the right to challenge a patent on any ground in district court and lose no substantive rights when an AIA review is denied." *Magnolia Medical Technologies*, Paper 17 at 6.

III. MERITS OF THE PETITION

Should the Director reach the merits of Hyundai's Petition, Germ Dome submits that the Petition should be denied because it fails to demonstrate that it is more likely than not that at least one of the challenged claims is unpatentable. 35 U.S.C. § 324(a). Specifically, a fatal defect of the Petition is that it applies an incorrect construction of the term "integral," which appears in each claim of the '061 Patent. Other defects as to certain other claimed features are present as well, and will be addressed in this Section.

1. Claim Construction

As noted by Hyundai, when there is a controversy over the meaning of a claim term, the Board will construe the term under the standard in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc) and its progeny. 37 C.F.R. § 42.200(b); *see, e.g., Toyota Motor Corp. v. Cellport Sys., Inc.*, IPR2015-00633, Paper 11 at 16 (PTAB Aug. 14, 2015).

Germ Dome submits that there is a controversy as to the meaning of the term “integral.” Hyundai asserts that “integral” should be given its plain and ordinary meaning or in the alternative should be construed as “part of the same structure, e.g., manufactured as a single piece.” [Petition at 34.] As will be discussed in detail below, Hyundai’s reading of “integral” under a purported plain and ordinary meaning is incorrect and inconsistent with the use of that term in the ‘061 Patent. However, Germ Dome agrees to adopt Hyundai’s proposed construction of “part of the same structure, e.g., manufactured as a single piece” for purposes of this proceeding.

This proposed construction is supported by the intrinsic evidence as well as extrinsic evidence in the form of dictionary definitions. *See, e.g., Phillips*, 415 F.3d at 1317 (“Although we have emphasized the importance of intrinsic evidence in claim construction, we have also authorized district courts to rely on extrinsic

evidence, which consists of ... dictionaries ...”)(citations and internal quotation marks omitted).

Beginning with the intrinsic record, the ‘061 Patent is clear that “integral” means something different from two separate pieces attached to one another. Specifically, the ‘061 Patent Specification teaches: “[t]he apparatus may further include an anterior structure, affixed to or integral with the housing...” [Ex. 1001 at 2:10-12.] Elsewhere the Specification also states: “although shown as a separate piece from the housing 12, posterior surface 28 may also be integral with housing 12...” [Ex. 1001 at 5:30-33.] Therefore, the way “integral” is used in the Specification excludes two separate pieces that are affixed to one another and requires a single-piece component. Thus the construction “part of the same structure, e.g., manufactured as a single piece” is consistent with the Specification.

The proposed construction is also supported by dictionary definitions. For example, the Concise Oxford American Dictionary published in 2006 defines “integral” as “included as part of the whole rather than supplied separately.” [Exhibit 2011.] Similarly, Merriam Webster’s Collegiate Dictionary published in 1994 defines integral as “formed as a unit with another part.” [Exhibit 2012.]

2. Level of Ordinary Skill in the Art

For purposes of this POPR, Germ Dome does not dispute that Hyundai's expert meets the level of skill in the art. [Petition at 6.] Germ Dome may address the level of ordinary skill in the art more fully if this PGR is instituted.

3. Response to Specific Grounds For PGR

A. Ground 1: Anticipation over Watanabe (Claims 1-5 and 10)

i. Watanabe Lacks Sidewall Integral with First Wall

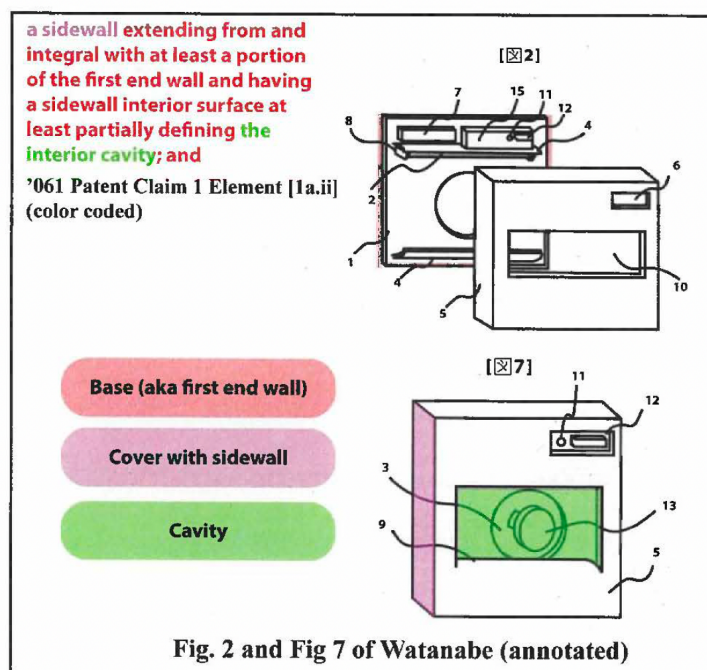
Ground 1 fails because Watanabe does not disclose a sidewall integral with a first end wall ("Integral Feature") as required by all claims challenged in Ground 1. Hyundai offers two alternative theories on this point. The first is under the plain and ordinary meaning of the term "integral." The second is under the correct construction for the term "integral" discussed above. However, Hyundai does not establish that it is more likely than not that Watanabe discloses the Integral Feature under either theory.²

² References to Watanabe in this POPR are to the translation provided by Hyundai at Exhibit 1006. For purposes of its POPR, Germ Dome accepts the translation of Watanabe offered by Hyundai. Germ Dome may commission its own translation of Watanabe if this PGR is instituted.

a. Plain and Ordinary Meaning of “Integral”

Beginning with Hyundai’s application of the plain and ordinary meaning of “integral,” Hyundai asserts that Watanabe discloses a sidewall that is “‘integral’ with the first wall when the cover and base are coupled together, within the meaning of the term “integral” as used in the ‘061 Patent.” [Petition at 34.] There are two problems with this theory.

First, Hyundai appears to use the concept of “plain and ordinary meaning” as an excuse to apply a definition of “integral” inconsistent with the ‘061 Patent Specification in order to advance its unpatentability arguments. Specifically, Hyundai alleges that Watanabe’s “base” constitutes the claimed first end wall and Watanabe’s “cover” includes the claimed sidewall, as shown in the below excerpt from page 33 of the Petition:



While Hyundai never explains what the plain and ordinary meaning of “integral” is, Hyundai asserts that the base and sidewall are “integral” “when the cover and base are coupled together.” [Petition at 34.] Hyundai also acknowledges that Watanabe discloses the base and sidewall as “detachably attached” to one another. [Petition at 33 (citing Ex. 1006 at ¶ [0005]).] Thus, according to Hyundai, “integral” is synonymous with “coupled together” and/or “detachably attached.” However, as discussed above in Section III(1), *supra*, the ‘061 Patent specification uses “integral” to mean something **other than** two separate pieces connected to one another. Thus Hyundai’s purported plain and ordinary meaning of “integral” is incorrect because it is contradicted by the Specification of the ‘061 Patent, and this theory fails. *See, e.g., Kaneka Corp. v. Xiamen Kingdomway Grp. Co.*, 790 F.3d 1298, 1304 (Fed. Cir. 2015) (rejecting construction that was inconsistent with the Specification).

Second, whatever “integral” means to Hyundai, Hyundai does not point to any evidence in Watanabe that the Integral Feature is met. Instead, Hyundai points only to its expert declaration, where its expert Dr. Lebby makes the same conclusory statement as is found in the Petition, verbatim. [Compare Petition at 34 with Exhibit 1003, Declaration of Michael Lebby at ¶ 124, both asserting that the base and sidewall in Watanabe are integral “when the cover and base are coupled together.”]

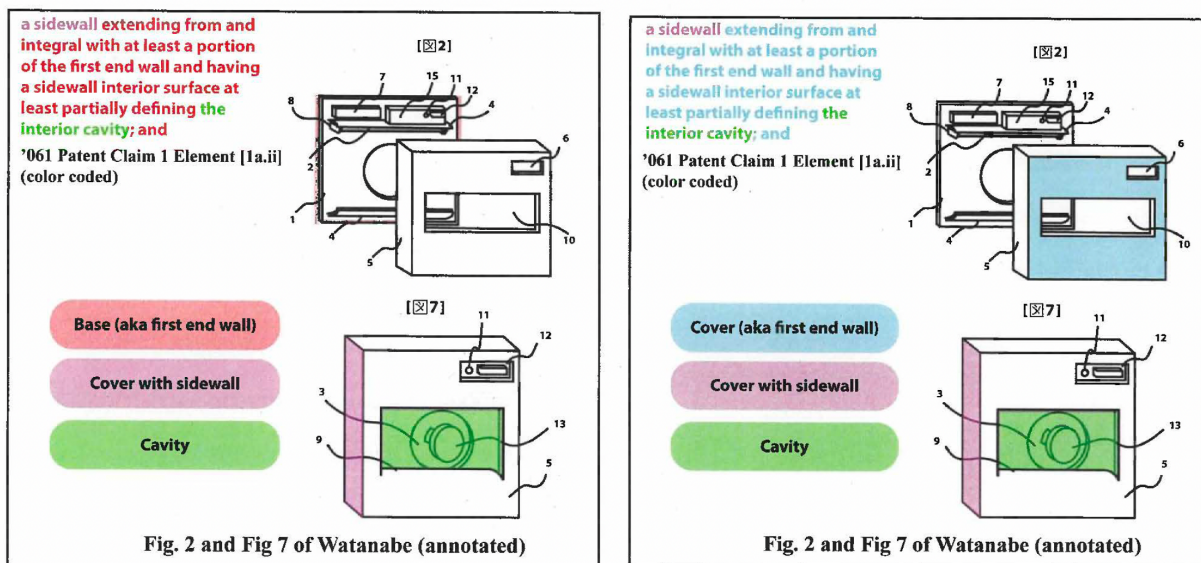
Dr. Lebby’s testimony is entitled to little weight as it adds nothing to the attorney argument in Hyundai’s Petition. *See, e.g., Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 (PTAB Aug. 24, 2022) (precedential) (a declaration is entitled to little weight when it contains an exact restatement of a petition’s unsupported, conclusory assertions without any additional supporting evidence or reasoning). Dr. Lebby is an experienced expert and he was able to provide supported testimony on other points in his Declaration. [*See, e.g., Ex. 1003 at ¶ 162, discussing use of specific type of light-distributing lens with support to multiple exhibits.*] This is in stark contrast to the lack of any support—by Dr. Lebby or otherwise—for Hyundai’s position on the Integral Feature.

Evidently realizing that its purported plain and ordinary meaning for the term “integral” is incorrect, Hyundai then proposes an alternate theory where “integral” means “part of the same structure (e.g., manufactured as a single piece).” [Petition at 34.] As discussed above, Germ Dome agrees with this construction. However, this second theory does not help Hyundai either, as will be addressed in the next section.

b. “Integral” Construed

Hyundai goes on to correctly construe the term “integral” and apply it to Watanabe’s disclosure. However, in order to do so Hyundai must take a different reading of Watanabe. Before, Hyundai asserted that **the base** is the claimed first

end wall. [Petition at 33.] Now, Hyundai asserts that **part of the cover** is the claimed first end wall. [*Id.* at 34-36.] Below are excerpts from pages 33 (left) and 35 (right) of the Petition illustrating this change:



Contrary to Hyundai's allegation, however, there is no disclosure in Watanabe that the cover is a single piece component. Hyundai points to paragraph [0005] and Figures 2 and 7 of Watanabe in support. Paragraph [0005] refers to the cover generally, but not to its specific construction or manufacture. Both Figures 2 and 7 show a seam between the alleged cover and sidewall (see above excerpt at right) which does not help Hyundai—instead, this suggests the cover and sidewall are **separate** pieces.

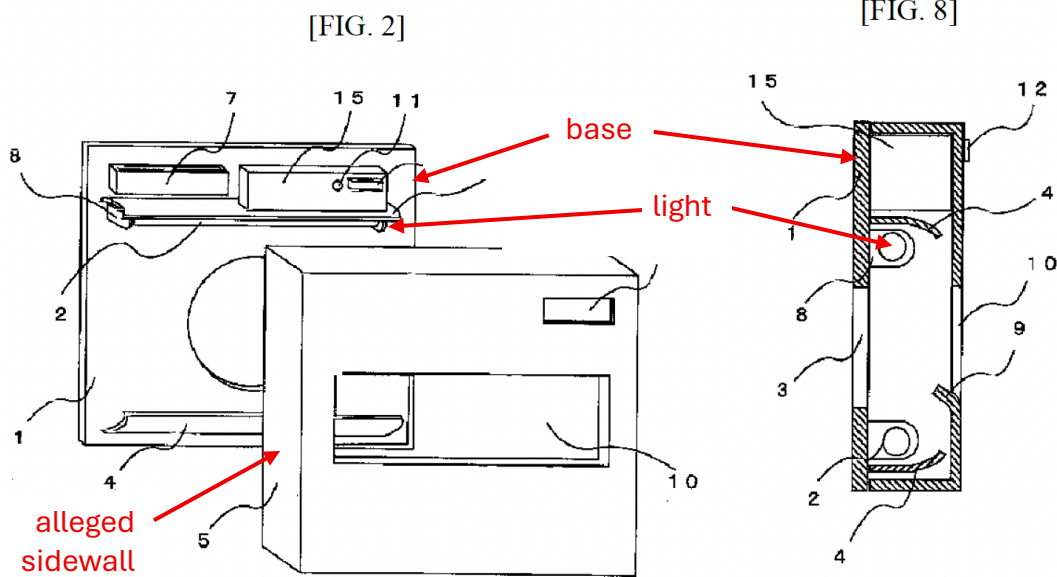
Indeed, Watanabe has two embodiments where the cover is explicitly described as a multipiece component. [Ex. 1006, ¶ [0006] and Figs. 5 and 6 (describing cover that includes separate upper and lower pieces); ¶ [0011] and Fig.

11 (describing over that includes left and right members).] Further, Watanabe discloses that certain components may be integrally assembled with the cover (“power supply, various control units, switches, and the like”). [Ex. 1006, ¶ [0008].] Thus Watanabe knew how to make certain components integral with one another but did not apply that principle to a cover and sidewall.

Hyundai also points to paragraphs 128 and 129 of Dr. Lebby’s declaration, but Dr. Lebby only states: “it is my opinion that Watanabe discloses a ‘first end wall’ with at least one ‘sidewall’ that are together manufactured as a single piece...” He provides no support for this position other than the irrelevant paragraph [0005] and Figures 2 and 7 of Watanabe. Nor does Dr. Lebby offer any explanation for why Watanabe pictures the alleged cover and sidewall with a seam between them in Figures 2 and 7.

ii. Ground 1 Separately Fails for Claim 3

Hyundai’s challenge to claim 3 fails for another reason. Claim 3 recites first and second germicidal light sources that project from the sidewall interior surface into the interior cavity. Watanabe does not disclose this feature. In Watanabe, the light (2) is mounted to the base (1), not to the component that Hyundai calls a sidewall, as shown in annotated Figures 2 and 8 below.



Hyundai asserts that claim 3 is met because light is projected into the interior cavity, then impinges on the sidewalls and reflects back into the interior cavity.

[Petition at 44-45.] However, that is not what claim 3 says. Claim 3 says that the germicidal light **sources** project from the sidewall interior surface, not reflected light. This is in contrast to claim 6, which recites “germicidal light” as opposed to “light sources.”

iii. Ground 1 Separately Fails for Claim 10

Hyundai’s challenge to claim 10 also fails for an additional reason. As discussed above with respect to the Integral Feature, Hyundai presents two interpretations of Watanabe. In the first interpretation, the base is the first end wall. In the second interpretation, the cover is the first end wall. The first interpretation can be applied to claim 10. Claim 10 recites that the first end wall is a posterior

end wall and the second end wall is an anterior end wall. Hyundai correctly notes that according to the orientation of Watanabe's structure with respect to the object to be sanitized (a door handle), the base is posterior while the cover is anterior. [Petition at 47-50.] This is because the base is closer to the object to be sanitized than the cover. [*Id.*] However, as discussed above in Section III(3)(A)(i)(a), *supra*, this first interpretation does not meet the Integral Feature because the base and alleged sidewall are detachable and this cannot be squared with the way the '061 Patent uses the term "integral."

On the other hand, Hyundai's second interpretation, where the cover is the first end wall, cannot be squared with claim 10. Instead, this interpretation has the opposite of the required orientation, since the first end wall (cover) would be anterior, not posterior as claimed. So, Hyundai's second interpretation of Watanabe does not meet claim 10. Under the second interpretation, no further analysis is needed to find claim 10 not unpatentable.

This presents an irreconcilable problem for Hyundai. Hyundai cannot switch between two mutually exclusive interpretations of Watanabe to support its anticipation arguments for individual claims. And Hyundai offers no interpretation of Watanabe that meets both the Integral Feature and claim 10.

B. Ground 2: Obviousness over Watanabe (Claims 1-20)

i. Watanabe Does not Render the Integral Feature Obvious

All claims challenged under Ground 2 recite the Integral Feature. For Ground 2, Hyundai asserts that to the extent Watanabe does not expressly disclose the Integral Feature, it would have been obvious for a POSITA to manufacture the sidewalls as part of the base or the cover as “obvious and routine design choices with benefits of ease of use and simplified manufacturing.” [Petition at 54-55, 69.] In support, Hyundai does not point to anything in Watanabe. Instead, Hyundai points to two paragraphs from its expert declaration which again parrot its Petition without offering any facts or analysis to support Hyundai’s position. [Compare *Id.* with Ex. 1003, ¶¶ 198-199.] Here again, Dr. Lebby’s testimony is entitled to little weight as it adds nothing to the attorney argument in Hyundai’s Petition. *See, e.g., Xerox Corp.*, IPR2022-00624, Paper 9.

Nor does Dr. Lebby make any effort to grapple with statements in Watanabe that run against Hyundai’s argument. For example, as noted above, Watanabe knew how to make certain components integral with one another but did not apply that principle to a cover and sidewall. [Ex. 1006, ¶ [0008].] Further, as to Hyundai’s allegation of “ease of use and simplified manufacturing,” Watanabe does not view either as a benefit that would stem from integrating the alleged sidewall with the

cover. Instead, Watanabe teaches multipiece covers. [Ex. 1006, ¶ [0006] and Figs. 5 and 6 (describing cover that includes separate upper and lower pieces); ¶ [0011] and Fig. 11 (describing cover that includes left and right members).]

ii. Ground 2 Separately Fails for Claims 3, 9, 13, and 14

Claim 3 recites first and second germicidal light sources that project from the sidewall interior surface into the interior cavity. Claim 13 recites the same features. Claims 9 and 14 recite that the at least one germicidal light source is attached to the sidewall and spaced from the posterior wall. As discussed above for Ground 1, Watanabe does not disclose these features. Rather, the light in Watanabe is attached to the base. [Section III(3)(A)(ii), *supra*.] Though Hyundai asserts in Ground 2 that it would have been obvious for light to reflect off of the sidewalls in Watanabe, this argument suffers from the same problems as in Ground 1 because that is not what claims 3, 9, 13, and 14 recite. [Petition at 59-60.] Each of these claims refer to the placement of the **sources** relative to the sidewall, not the light (in contrast to claim 6, for example).

Hyundai also asserts the mounting surface for the light source(s) is a “routine design choice,” here again citing only to its bald expert declaration. [Petition at 66, Ex. 1003 at ¶ 253.] Neither Hyundai nor its expert provide any reason that a person of skill in the art would have moved the light in Watanabe from the base to the sidewall.

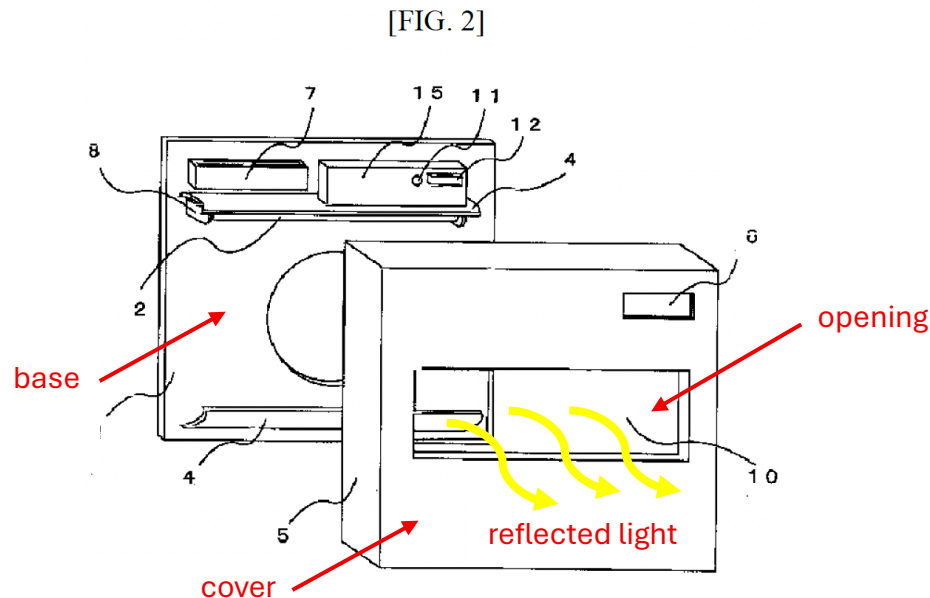
iii. Ground 2 Separately Fails for Claims 6 – 8, 11 – 17, and 20

Claims 6, 11, and 20 recite that each of the first end wall (or posterior wall) interior surface, the second end wall (or anterior wall) interior surface, and the sidewall interior surface are UV reflective and configured to reflect germicidal light from the at least one germicidal light source toward the object (“Reflective Feature”). Claims 7 and 8 depend from claim 6 and claims 12-17 depend from claim 11. Hyundai asserts that the Reflective Feature is obvious over Watanabe because it “would have been obvious as a routine design choice to further improve irradiation coverage.” In support, both Hyundai and its expert rely on the presence of reflecting plates in Watanabe. [Petition at 62-63; Ex. 1003 at ¶¶ 236-239.]

However, the fact that Watanabe uses reflecting plates undermines rather than supports Hyundai’s argument. The reflecting plates indicate that Watanabe already has a means of reflecting light towards the object to be sanitized, and the object is sufficiently irradiated in Watanabe’s design. [Ex. 1006 at ¶¶ [0004]-[0007].] So, Hyundai’s assertion that improvements in irradiation coverage are needed to improve Watanabe’s design is contrary to Watanabe’s own disclosure.

Further, Watanabe teaches a benefit of the reflecting plates: the ability to select certain shapes and mounting positions to ensure that reflected light from the sterilization lamp does not reach the eyes of a user. [*Id.* at ¶¶ [0006]-[0007].] This is a key safety goal repeatedly addressed by Watanabe. [*Id.*, *see also* Means for

Solving, ¶[0013].] If Watanabe were modified so that its interior surfaces were reflective as in claim 6, those surfaces, and especially the base, would reflect irradiating light back to the user through the opening in the cover as shown in annotated Figure 2 below:



Dr. Lebby asserts that “nothing in Watanabe teaches away such a configuration” but makes no effort to address this safety concern. [Ex. 1003 at ¶ 238.] As Watanabe teaches a reason not to have reflective interior surfaces on each of the base, sidewalls, and cover for safety reasons, Hyundai cannot establish that it is more likely than not that Watanabe discloses the Reflective Feature. *See Arctic Cat Inc. v. Bombardier Rec. Prods.*, 876 F.3d 1350, 1363 (Fed. Cir. 2017) (reason not to combine taught in prior art reference supported finding of non obviousness over that reference.)

iv. Ground 2 Separately Fails for Claims 10 – 17

Claim 10 recites that the first end wall is a posterior end wall and the second end wall is an anterior end wall. As discussed above in Ground 1, the Petition contains an irreconcilable problem in that the only one of Hyundai's proposed interpretations of Watanabe meets this feature. However, adopting that interpretation means the Integral Feature required by claim 1, from which claim 10 depends, is not met. Like claim 10, claim 11 also recites posterior and anterior walls together with the Integral Feature. Thus claim 11 poses the same irreconcilable problem. Claims 12-17 depend from claim 11. Accordingly, Ground 2 fails for Claim 10 and claims 11-17 for the same reasons discussed above for Ground 1.

C. Ground 3: Obviousness over Watanabe and Stanley (Claims 1-20)

i. Stanley Does not Cure Watanabe's Failure to Teach the Integral Feature

For Ground 3, Hyundai asserts that to the extent Watanabe does not teach the Integral Feature (required by all challenged claims), Stanley does so. Here, Hyundai only relies on the incorrect plain and ordinary meaning interpretation of "integral," pointing to disclosure in Stanley that "each wall is planar and **coupled to at least another wall.**" [Petition at 76 (citing Ex. 1007 at ¶ [0035]) (emphasis in original).] However, as discussed in Section III(1), *supra*, reading "integral" as synonymous with "coupled to" is incorrect because it is inconsistent with the

Specification of the ‘061 Patent. Stanley does not meet the claims when the correct interpretation of “integral” is applied—instead, Stanley teaches individual walls assembled and sealed to one another. [Ex. 1007 at ¶¶ [0035]-[0037].]

Hyundai goes on to assert that one could have “reconfigured the housing of Watanabe such that rather than being ‘detachably attached,’ the ‘cover’ is part of the ‘base’ and is non-detachable.” [Petition at 76-77.] However, Stanley does not disclose that its walls are “non-detachable” as Hyundai claims. It is not surprising, then, that here again Hyundai’s assertion is supported only by its bald expert declaration. [*Id.*] Indeed, Dr. Lebby does not even use the term “non-detachable” in the cited section. [Ex. 1003, ¶ 302.] Despite Hyundai’s urging, Stanley does not cure Watanabe’s failure to disclose the Integral Feature.

ii. Ground 3 Separately Fails for Claims 3, 9, 13, and 14

Claim 3 recites first and second germicidal light sources that project from the sidewall interior surface into the interior cavity. Claim 13 recites the same features. Claims 9 and 14 recite that the at least one germicidal light source is attached to the sidewall and spaced from the posterior wall. As discussed above for Ground 1 with respect to claim 3, Watanabe does not disclose these features.

Rather, the light in Watanabe is attached to the base. [Section III(3)(A)(ii), *supra*.]

Though Hyundai asserts in Ground 3 that it would have been obvious for light to reflect off of the sidewalls based on the teachings of Stanley, this argument

suffers from the same problems as in Grounds 1 and 2 because that is not what claims 3, 9, 13, and 14 recite. [Petition at 78-79, 85-86.] Each of these claims refer to the placement of the **light source(s)** relative to the sidewall, not the light (in contrast to claim 6, for example, which refers to light).

Hyundai also asserts that Stanley teaches varying positions for the placement of the light source. [Petition at 79, 85-86.] However, neither Hyundai nor its expert provide any reason that a person of skill in the art would have moved the light in Watanabe from the base to the sidewall.

iii. Ground 3 Separately Fails for Claims 6 – 8 and 11 – 17, and 20

Claims 6, 11, and 20 require the Reflective Feature. Claims 7 and 8 depend from claim 6 and claims 12-17 depend from claim 11. Hyundai asserts that to the extent Watanabe does not teach the reflective feature, Stanley does so. [Petition at 81-83.] However, as discussed above for Ground 2, Watanabe teaches a reason not to add the Reflective Feature to its design. [See Section III(3)(B)(iii), *supra*.] Neither the Petition nor the expert declaration address this disclosure in Watanabe. [Petition at 81-83; Ex. 1003 at ¶¶ 318 – 322.] Thus, a POSITA would not have modified Watanabe to include the Reflective Feature Hyundai suggests, even if it were taught by Stanley.

iv. Ground 3 Separately Fails for Claims 10 – 17

Hyundai continues to rely on Watanabe for the posterior/anterior features of claims 10 and 11. [Petition at 87.] Ground 3 therefore fails for claims 10 and 11, and claims 12-17 insofar as they depend from claim 11, for the same reasons discussed in Grounds 1 and 2 above. [See Sections III(3)(A)(iii) and III(3)(B)(iv), *supra*.]

D. Summary of Flaws on the Merits

Summarized below are the flaws in the merits of Hyundai's Petition:

Flaw	Claims Affected
Hyundai applies the wrong construction of "integral"	All claims (1-20)
Under the correct construction of "integral," both Stanley and Watanabe lack the Integral Feature	All claims (1-20)
Watanabe lacks the claimed posterior/anterior walls, where the sidewall is integral with the posterior wall. Stanley does not cure this deficiency.	Claims 10-17
Watanabe discloses a light source mounted to the base rather than the sidewall, and Hyundai does not explain any reason why one would move the light source	Claims 3, 9, 13, and 14
Watanabe teaches a reason not to add the Reflective Feature	Claims 6-8, 11-17, and 20

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CERTIFICATE OF COMPLIANCE

The undersigned certifies that the foregoing Patent Owner Preliminary Response complies with the type-volume limitations of 37 C.F.R. § 42.24(b)(1). Specifically, this POPR contains 5,038 words as determined by the Word count feature of Microsoft Word, excluding those portions of this POPR listed in 37 C.F.R. § 42.24(a)(1).

The undersigned further certifies that this POPR complies with the typeface and typestyle requirements of 37 C.F.R. § 42.6(a)(2)(ii)-(iii). This POPR was prepared in Times New Roman 14-point font.

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), I hereby certify that a true and correct copy of the foregoing Patent Owner Preliminary Response and all exhibits cited in the included Exhibit List were served on counsel of record by filing this document through P-TACTS and via email to the following addresses:

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