

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DYSON TECHNOLOGY LTD. AND DYSON, INC.,
Petitioner,

v.

OMACHRON INTELLECTUAL PROPERTY INC.,
Patent Owner.

IPR2024-00670
Patent 8,607,407 B2

Before MATTHEW S. MEYERS, RYAN H. FLAX, and
BRENT M. DOUGAL, *Administrative Patent Judges*.

DOUGAL, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. *Background and Summary*

Petitioner, Dyson Technology Ltd. and Dyson, Inc., requests institution of an *inter partes* review challenging the patentability of claims 1–25 (the “challenged claims”) of U.S. patent 8,607,407 B2 (Ex. 1001, “the ’407 patent”). Paper 1 (“Petition” or “Pet.”). Patent Owner, Omachron Intellectual Property Inc., argues that Petitioner’s request is deficient and should not be granted. Paper 7 (“Preliminary Response” or “Prelim. Resp.”). Petitioner also filed a Preliminary Reply (Paper 8), and Patent Owner filed a Preliminary Sur-reply (Paper 9).

Applying the standard set forth in 35 U.S.C. § 314(a), which requires demonstration of a reasonable likelihood that Petitioner would prevail with respect to at least one challenged claim, we institute an *inter partes* review.¹

B. *Real Parties-in-Interest*

In addition to the named parties, Patent Owner also identifies Omachron Alpha Inc., SharkNinja Operating LLC, and SharkNinja Sales Company as real parties-in-interest. Paper 4, 1. Patent Owner also states that SharkNinja Management LLC may be a real party-in-interest. *Id.*

C. *Related Matters*

SharkNinja Operating LLC v. Dyson, Inc., No. 1:23-cv-11277 (D. Mass.) and *SharkNinja Operating LLC et al v. Dyson, Inc.*, No. 1:23-cv-12372 (D. Mass.), are listed as related district court litigation matters. Pet. 117; Paper 4, 1.

¹ Our findings and conclusions at this stage are preliminary, and thus, no final determinations are made.

D. The '407 Patent

The '407 patent is directed to an emptying mechanism for a hand vacuum cleaner having a dirt collection chamber, with a front wall comprising an openable door to facilitate emptying of debris. Ex1001, Abstr., 1:14–16, 1:47–62. Figure 1, reproduced below, illustrates a hand vacuum cleaner.

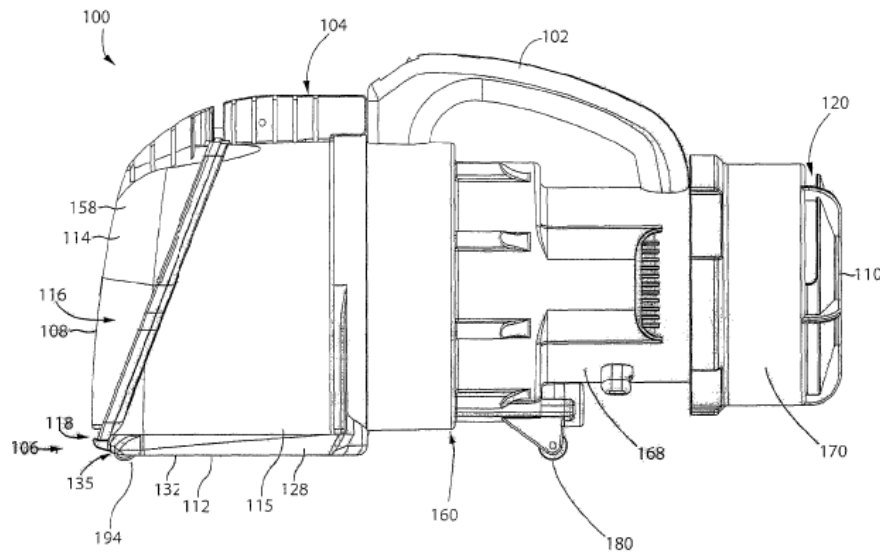


Fig. 1

Figure 1 shows a hand vacuum cleaner with a handle (102) at the top, and a nozzle (112) at the bottom front. *Id.* at 3:48–49, 3:53–58, Fig. 1. The nozzle is configured to engage the surface to be cleaned. *Id.* at 3:59–61. Above the nozzle is a cyclone unit (114) including a cyclone (122) and a dirt collection chamber (124), which can be better seen in Figure 5A, below. *Id.* at 3:65–4:2, 4:10–14.

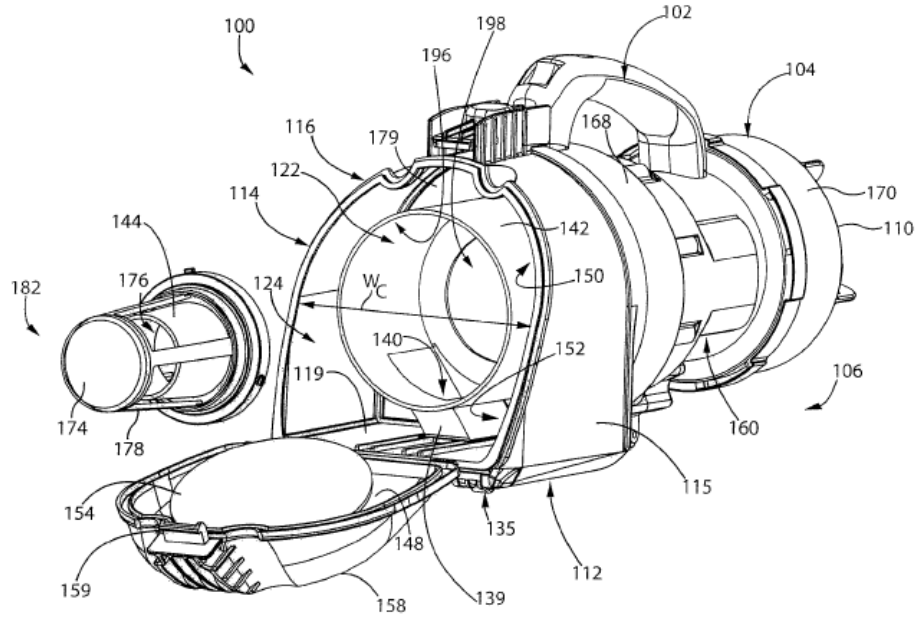


Fig. 5A

Figure 5A shows the hand vacuum cleaner with a front wall (158) which serves as an openable door to the dirt collection chamber (124). *Id.* at 7:14–20. The openable door (158) is shown pivotally rotated to an open position. Figure 5A, also shows an assembly (182) that may include a screen, which has been removed from within the cyclone (122). *Id.* at 6:37–40.

The placement of a door at the front of the hand vacuum (as opposed to on a sidewall or in the back of the vacuum) allows a user to empty the vacuum without getting dirt on the body of the vacuum or the user's hand as the dirt is poured out. *Id.* at 1:50–62. Further, when the door is open, both of the cyclone and the dirt collection chamber are opened, allowing a user to empty all of the contents of the hand vacuum, including the cyclone where debris can be trapped, at once. *Id.* at 9:13–16.

E. Illustrative Claim(s)

Of the challenged claims, claims 1 and 23–25 are independent. Claim 1, reproduced below, is illustrative:

1. A hand vacuum cleaner comprising:

- a) a front end having a front wall and a rear end;
- b) an air flow passage extending from a dirty air inlet to a clean air outlet;
- c) a first cyclone unit positioned in the air flow passage, the first cyclone unit comprising at least one cyclone and at least one dirt collection chamber external to the cyclone chamber;
- d) the cyclone and the dirt collection chamber having an openable door, the front wall comprising the openable door, whereby, when the door is in an open position, both the cyclone and the dirt collection chamber are opened; and,
- e) a suction motor positioned in the air flow passage.

Ex. 1001, 9:5–18.

F. Evidence

Petitioner's grounds of unpatentability rely on the following evidence:

Name	Patent Document	Exhibit
IPVG	GB 283,179 (Aug. 9, 1928)	1006
Conrad335	US 2007/0209335 A1 (Sept. 13, 2007)	1005
Martelliere	FR 1,094,603 (May 23, 1955)	1009/1010 ²
Butler	WO 2007/084543 A2 (July 26, 2007)	1020
Jianan	CN 101,061,932 (Oct. 31, 2007)	1012/1013 ³
Khalil	US 2006/0156508 A1 (July 20, 2006)	1014

² English language translation.

³ English language translation.

G. Grounds

Petitioner asserts the following grounds of unpatentability (Pet. 5), supported by the declaration of Robert Giachetti (Ex. 1002):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–25	103(a) ⁴	IPVG, Conrad335
23, 24	102	Martelliere
23, 24	103(a)	Martelliere, IPVG
1–25	103(a)	Jianan, Khalil
23, 24	102	Butler

II. ANALYSIS

A. Legal Standards

Petitioner bears the burden to demonstrate unpatentability. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). At this preliminary stage, we determine whether the information presented in the Petition shows a reasonable likelihood that Petitioner would prevail in establishing that at least one challenged claim would have been obvious over the prior art. *See* 35 U.S.C. § 314(a).

“A claim is anticipated [under 35 U.S.C. § 102] only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. Inc. v. Union Oil Co.*, 814 F.2d 628, 631 (Fed. Cir. 1987). Moreover, “[b]ecause the hallmark of anticipation is prior invention, the prior art reference—in order to anticipate under 35 U.S.C. § 102—must not only disclose all elements of the claim within the four corners of the document, but must also disclose those

⁴ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 285–88 (2011), revised 35 U.S.C. §§ 102–103 effective March 16, 2013. We refer to the pre-AIA versions.

elements ‘arranged as in the claim.’” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008). Whether a reference anticipates is assessed from the perspective of an ordinarily skilled artisan. *See Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 1368 (Fed. Cir. 2003) (“‘[T]he dispositive question regarding anticipation [i]s whether *one skilled in the art* would reasonably understand or infer from the [prior art reference’s] teaching’ that every claim element was disclosed in that single reference.”).

A claim is unpatentable as obvious under 35 U.S.C. § 103(a) if “the differences between the subject matter sought to be patented 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) (quoting 35 U.S.C. § 103(a)). We resolve the question of obviousness based on underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the prior art and the claims; (3) the level of skill in the art; and (4) when in evidence, objective indicia of nonobviousness. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

We apply these principles to the Petition’s challenges.

B. Level of Ordinary Skill in the Art

We review the grounds of unpatentability in view of the understanding of a person of ordinary skill in the art at the time of the invention (“POSA”). *Id.* at 13, 17. Petitioner’s declarant asserts that a person of ordinary skill in the art

would have had a bachelor’s degree in mechanical engineering or a similar field and 2-3 years of experience in machine design,

including machines that include fluid dynamics or fluid paths, such as vacuum cleaners. Additional education could offset less experience and vice versa, and a POSA could have also obtained similar knowledge and experience through other means.

Ex. 1002 ¶ 41; *see also* Pet. 12 (making the same assertion without citation to declarant).

Patent Owner does not contest the level of skill. Prelim. Resp. 3. We are persuaded, on the present record, that the proposal of Petitioner’s declarant is consistent with the problems and solutions in the ’407 patent and prior art of record. We adopt the above definition of the level of skill for the purposes of this Decision.

C. Claim Construction

In *inter partes* review, we construe claims 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), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. 37 C.F.R. § 42.100(b) (2022).

Petitioner asserts that no terms require express construction. Pet. 12–13. Likewise, Patent Owner states that no terms require express construction. Prelim. Resp. 3.

Patent Owner does provide a definition from Merriam-Webster Online Dictionary of the word “door.” *Id.* at 12n.1 (citing Ex. 2002). Viewing this definition, Petitioner asserts that Patent Owner seeks to construe the term “door.” Paper 8, 1. Patent Owner responds that a construction of the term “door” is unnecessary to resolve the issues at this stage. Paper 9, 1–2.

We agree that no terms need to be construed. *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)).

D. 35 U.S.C. § 103 – IPVG, Conrad335

Petitioner argues that the combination of IPVG and Conrad335 renders obvious claims 1–25. Pet. 25–72. Patent Owner argues that Petitioner has not demonstrated a reasonable likelihood of success showing that the independent claims are unpatentable. Prelim. Resp 20–23.

We address claim 1 as representative, and determine below that Petitioner establishes a reasonable likelihood of prevailing for the purposes of instituting trial.

1. IPVG

IPVG is a patent directed to a stick vacuum cleaner having an “enclosed dust bag” that protects the user from “accidental contact with current carrying parts” of the vacuum, such as the “securing means for the handle.” Ex. 1006, 1:10–21, 1:34–41. IPVG describes a “one-piece insulating cover adapted to cover the handle,” including a conductive screw that secures the handle to the casing of the vacuum cleaner. *Id.*, 1:34–41. The IPVG stick vacuum cleaner can be seen in Figure 2, reproduced below.

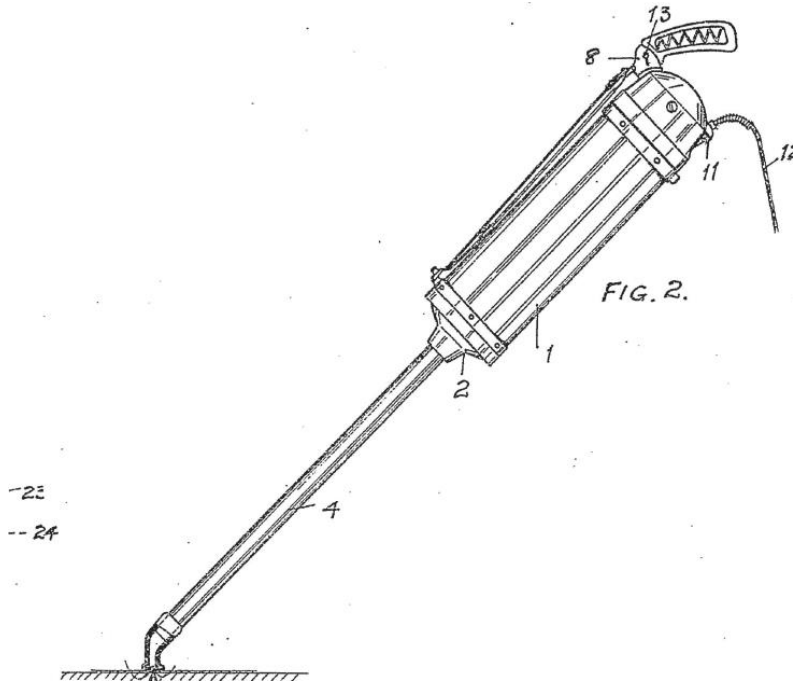


Figure 2 shows a stick vacuum cleaner with a casing (1) enclosing a dust bag, a screwed cover (2) on a first end of the casing, a suction pipe (4) extending from the cover, and a handle (8) at the second end of the casing. *Id.* at 1:51–62.

2. Conrad335

Conrad335 is titled Vacuum Cleaner with a Movable Divider Plate and describes an upright vacuum with “a cyclone separator” having a cyclone chamber divided by a plate into “an upper cyclone chamber and a lower dirt collection chamber.” Ex1005, codes 54, 57, ¶¶ 4, 23.

Figure 1 of the vacuum cleaner and Figure 2a of the cyclonic cleaning stages, are reproduced below.

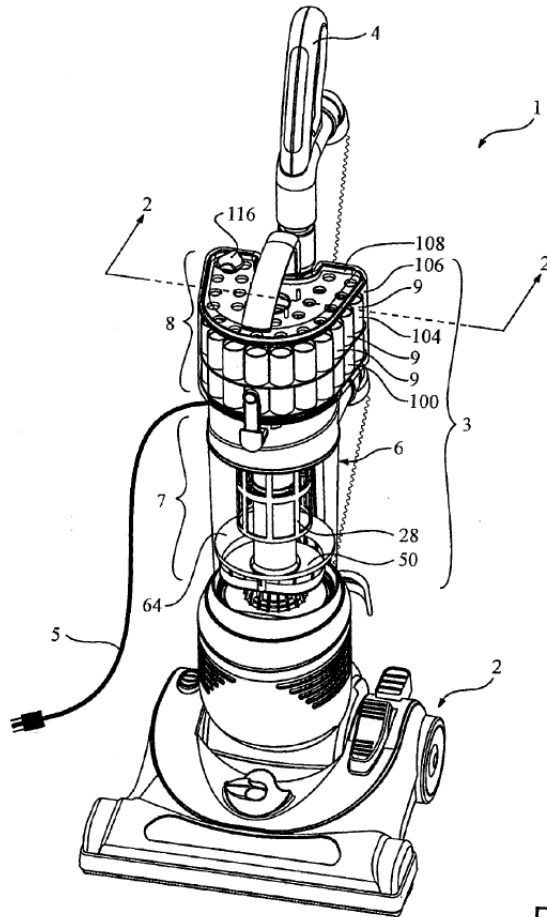


Fig. 1

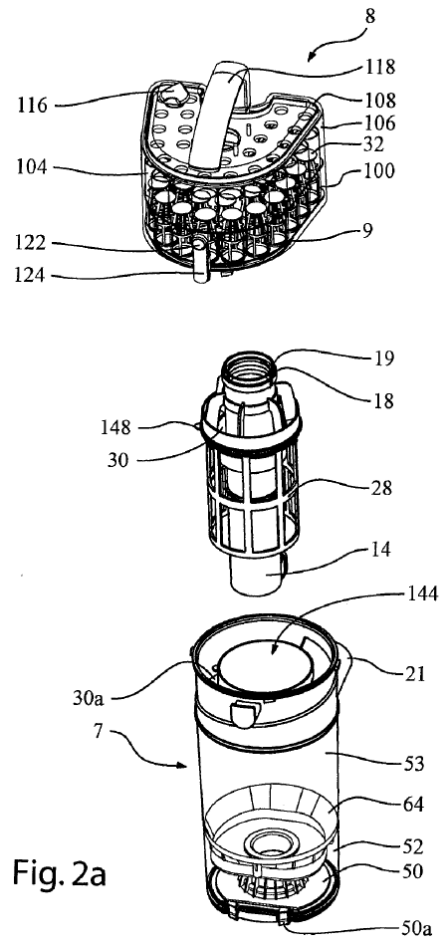


Fig. 2a

Figure 1, above left, shows an upright vacuum cleaner with a ground engaging head (2) at the bottom, a main casing (3) in the middle, and a handle (4) at the top. *Id.* ¶ 274. The main casing is shown in exploded view in Figure 2a, above right. The main casing (3) includes a two cyclonic cleaning stages (7, 8). *Id.* The first cleaning stage (7) includes a single cyclone and the second cleaning stage (8) includes “a plurality of cyclones 9 in parallel.” *Id.*

Though not labeled in Figure 2a, a plate is also shown at the bottom of first cleaning stage which creates a dirt collection chamber (52) between the plate and a hinged floor (50). *Id.* ¶¶ 328, 338.

3. *Analysis of Independent Claims*

Petitioner argues that independent claims 1 and 23–25 are taught by the combination of IPVG and Conrad335. Pet. 27–50. Broadly speaking, Petitioner argues that one of skill in the art would utilize Conrad335’s cyclonic-separation system and hinged door in IPVG’s stick vacuum cleaner to teach the features of claim. *Id.*

Patent Owner disagrees, arguing that Petitioner fails to show a reason to combine IPVG and Conrad335 and that the cited references do not teach or suggest the claimed “openable door.” Prelim. Resp. 20–23. Both parties address the independent claims together. We address claim 1 as representative.

For the reasons expressed below, we determine that Petitioner has established a reasonable likelihood of succeeding in showing that at least claim 1 is unpatentable.

a) *Uncontested Limitations*

Petitioner argues that IPVG teaches a hand vacuum cleaner where the screwed cover (2) serves as a front end/front wall, and which vacuum cleaner also has a rear end, as required by claim 1. Pet. 38–40 (citing e.g., Ex. 1006, 1:10–21, 1:51–57, 1:92–2:2, Figs. 1, 3; Ex. 1002 ¶¶ 168–169, 173–174). Petitioner also argues that IPVG teaches a motor (7) and fan (6) (i.e., a suction motor) in an air flow passage that cause air to flow from a suction opening (i.e., dirty air inlet) to an exhaust (i.e., clean air outlet), as also required by claim 1. *Id.* at 40–41 (citing Ex. 1006, 1:51–62, Fig. 1; Ex. 1002 ¶¶ 178–182).

Patent Owner does not address or contest these assertions concerning the teachings of IPVG. *See* Prelim. Resp. 20–23.

We have analyzed Petitioner's arguments and cited evidence, and determine that Petitioner has shown a reasonable likelihood of prevailing with respect to these limitations of claim 1.

b) Cyclone Unit

Claim 1 requires:

c) a first cyclone unit positioned in the air flow passage, the first cyclone unit comprising at least one cyclone and at least one dirt collection chamber external to the cyclone chamber.

Ex. 1001, 9:9–12.

Petitioner points to Conrad335's first cleaning stage in Figure 2a, as having a cyclone and a dirt collection chamber separated from a cyclone chamber by a plate (i.e., external to the cyclone chamber). Pet. 42–44 (citing Ex. 1005 ¶¶ 283–284, 318, Fig. 2a; Ex. 1002 ¶¶ 156–192). Petitioner further argues that the first cleaning stage is positioned in the air flow passage. *Id.* Petitioner then points to the embodiment of Figure 6g as another example with a similar configuration that meets the claimed limitations. *Id.* at 44.

Petitioner identifies that IPVG uses a dust bag positioned in the suction air stream. *Id.* at 42 (citing Ex. 1006, 1:51–57, cl. 1; Ex. 1002 ¶ 187). Petitioner argues that “[a] POSA would have been motivated to modify IPVG's ‘dust bag 5’ with Conrad335's cyclone-separator teachings and would have reasonably expected success” because, *inter alia*, Conrad335 expressly invites such a combination. Pet. 44.

Patent Owner does not address or contest the individual teachings of Conrad335 or IPVG. *See* Prelim. Resp. 20–21. Patent Owner does however, contest that Petitioner has established a reason to combine these references. *Id.* at 21.

In particular, Patent Owner argues that the “rationales are merely conclusory statements with no explanation for why the combination is a simple substitution, why the advantages of the cyclonic separation mechanism . . . in Conrad335 apply to the enclosed dust bag stick vacuum of IPVG, or why the substitutions would improve the vacuum of IPVG.” *Id.* Patent Owner further argues that the Declaration of Mr. Giachetti relied on for support “merely make conclusory statements.” *Id.* (citing e.g., Ex. 1002 ¶¶ 144–56).

In so arguing, Patent Owner does not specifically address any of Petitioner’s arguments or positions. Rather, Patent Owner’s arguments are themselves conclusory, general assertions.

Petitioner’s first reason why one of skill in art would combine Conrad335’s “cyclone separator” with IPVG’s stick or hand vacuum, is Conrad335’s explicit teaching that it is directed to “a ‘stick’ or ‘hand vacuum.’” Pet. 26 (quoting Ex. 1005 ¶ 376), 27–28, 29–30; Ex. 1002 ¶¶ 144, 149–153. Specifically, Conrad335 states that “the cyclonic embodiments described herein may be used in conjunction with . . . a stick vacuum cleaner, . . . a hand vacuum, . . . or any other type of vacuum cleaner.” Ex. 1005 ¶ 376. Conrad335’s explicit teaching provides a motivation to combine the teachings of Conrad335’s cyclonic embodiments with IPVG’s stick or hand vacuum. *KSR Int’l*, 550 U.S. at 418–419 (teaching in the art can show combination is obvious).

Petitioner also argues that:

A POSA would have understood that cyclonic filtration had certain advantages over dust-bag filtration, including (1) no bag needs to be replaced, reducing recurring costs; (2) unlike cyclonic cleaners, dustbag cleaners lose suction as they fill; and

(3) cyclonic cleaners give the user a visual indication of how full the container is and when to empty.

Pet. 30 (citing Ex. 1002 ¶¶ 150–53). This argument is supported by Petitioner’s declarant, and by citations to and a discussion of two prior art references, in addition to the teachings of Conrad335. Pet. 30–31 (citing Ex. 1002 ¶¶ 150–53; Ex. 1010, 1; Ex. 1016, 1:5–10; Ex. 1005 ¶¶ 2, 112.

In view of the above and the evidence of record, we find Petitioner’s arguments sufficiently supported to show a reasonable likelihood that this claim limitation is unpatentable.

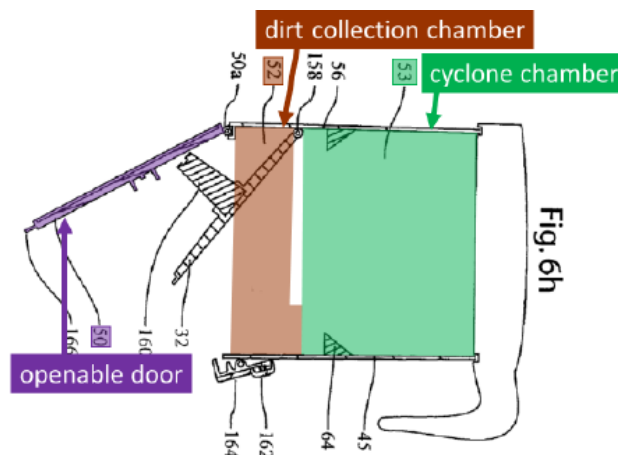
c) Openable Door

Claim 1 also requires:

d) the cyclone and the dirt collection chamber having an openable door, the front wall comprising the openable door, whereby, when the door is in an open position, both the cyclone and the dirt collection chamber are opened.

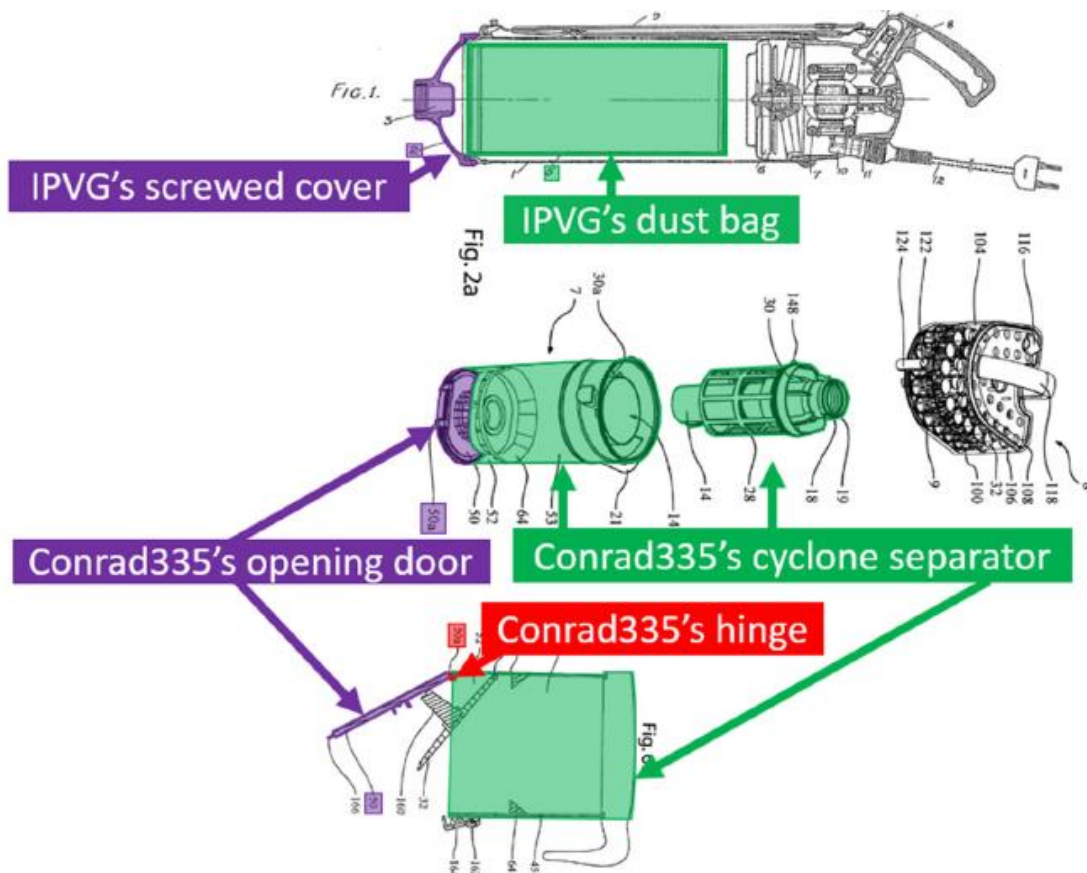
Ex. 1001, 9:13–17.

As illustrated in Petitioner’s marked-up version of Figure 6h below, Petitioner argues that Conrad335 teaches that “**“openable door [50]”** is an openable door to both Conrad335’s ‘**dirt collection chamber 52**’ and Conrad335’s ‘**cyclone chamber 53.**” Pet. 46 (citing Ex. 1005 ¶¶ 147, 338–339, Fig. 6h; Ex. 1002 ¶¶ 201–202.



Id. at 45. Conrad335 Figure 6h shows “a vertical section through a cyclone separator . . . wherein the bottom door is open.” Ex. 1005 ¶ 247. Petitioner has added highlighting and words to identify the “cyclone chamber” (green), the “dirt collection chamber” (brown), and the “openable door” (purple). Pet. 45. The figure also shows how the separator plate moves out of the way when the door is open to allow emptying of both the dirt collection and cyclone chambers. Petitioner also quotes Conrad335’s claim 13 as stating “Conrad335’s design ‘permit[s] dirt . . . in the cyclone chamber and the dirt collection chamber to be removed concurrently.’” *Id.*

Petitioner attempts to illustrate how the combination teaches “the front wall comprising the openable door” with a Figure combining IPVG Figure 1, Conrad335 Figure 2a, and Conrad335 Figure 6h, reproduced below. *Id.* at 39–40.



Petitioner's above Figure shows IPVG's vacuum and two versions of Conrad335's cyclone separator. Petitioner has highlighted IPVG's dust bag and Conrad335's cyclone separator in green, Conrad335's hinge in red, and IPVG's screwed cover, and Conrad335's opening door in purple, thereby illustrating similarities between the references.⁵

Petitioner argues that "IPVG's '**screwed cover 2**' is a front wall at the '**front end**.'" Pet. 39 (citing Ex. 1002 ¶¶ 173–74). Petitioner further argues that "a POSA would have been motivated to modify IPVG's '**screwed cover 2**' with Conrad335's '**opening door 50**,'" and that "[a] POSA would have been motivated to modify IPVG's 'dust bag 5' with Conrad335's cyclone-separator teachings." *Id.* at 39–40, 46.

In addition to the reasons to combine discussed in the prior section concerning Conrad335's cyclone embodiments, Petitioner also argues that

a POSA would have known that Conrad335's hinged "opening door 50" had certain advantages over IPVG's "screwed cover 2," including ease of opening for cleaner emptying, and would have been motivated to incorporate Conrad335's hinged-door teachings into IPVG. Ex1002 ¶154. Unlike IPVG's emptying process, which involves a user unscrewing "screwed cover 2," removing "dust bag 5," and carrying the dirty dust bag to the trashcan, a cleaner having Conrad335's "opening door 50" may be emptied by simply holding the cleaner over a trashcan and pivoting the door open "such as by pushing [a] button." Ex1006, 1; Ex1005 ¶339. By contrast to IPVG's "screwed cover 2," a POSA would have understood Conrad335's "opening door 50"

⁵ Patent Owner asserts that "Petitioners neither explain nor address how or why a POSITA would implement this modification or why Conrad335's openable bottom door . . . would be a front wall if incorporated into IPVG's stick vacuum." Prelim. Resp. 21–22. Patent Owner fails to address the actual arguments in the Petition identified above, or to explain why additional explanation is necessary. Based on the current record, Petitioner has satisfied its initial burden.

can empty dirt more quickly, conveniently, and hygienically.
Ex1002 ¶154.

Id. at 31.

Patent Owner argues that Petitioner fails to “provide any explanation for why a POSITA, reading IPVG, would have been motivated to replace the disclosed screwed cover that covers the dust bag cavity to implement a hinged door beyond the hindsight-informed statement that such a cover would have made opening the cavity easier.” Prelim. Resp. 21.

As noted above, and relied on by Petitioner, Conrad335 states that “the cyclonic embodiments described herein may be used in conjunction with . . . a stick vacuum cleaner, . . . a hand vacuum, . . . or any other type of vacuum cleaner.” Ex. 1005 ¶ 376. Conrad335’s cyclone separator, movable plate and door, would all appear to be part of Conrad335’s cyclonic embodiments. Thus, Conrad335 provides an explicit reason to combine Conrad335 with IPVG.

Further, though Conrad335 does not expressly say that the “opening door 50’ can empty dirt more quickly, conveniently, and hygienically,” as asserted by Petitioner we disagree that it amounts to hindsight. Rather, we agree with Petitioner’s declarant the one of skill in the art would have recognized these benefits. Ex. 1002 ¶ 154.

In view of all of the above and the evidence of record, we find Petitioner’s arguments sufficiently supported to show a reasonable likelihood that this claim limitation is unpatentable.

d) Conclusion

As the Petition sufficiently identifies how IPVG and Conrad335 teach the limitations of independent claim 1, and provides a rationale underpinning

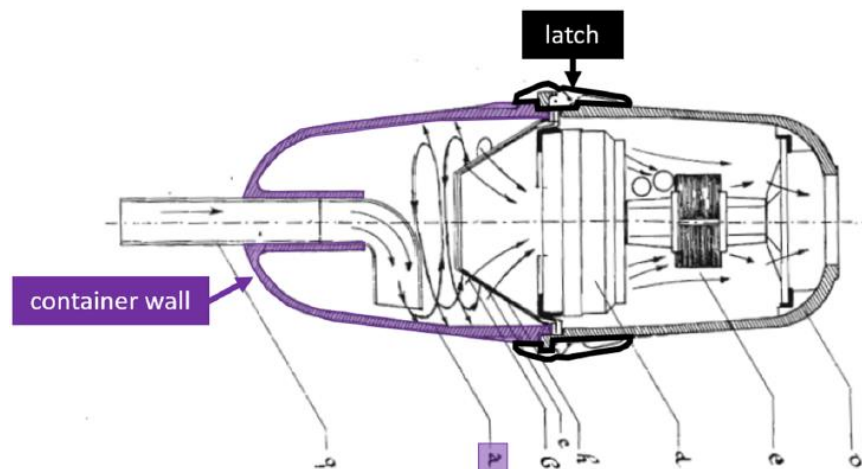
as to why they would have been combined by the ordinarily skilled artisan, it establishes a reasonable likelihood of prevailing.

4. *Dependent Claims 2–22*

Petitioner provides additional arguments and evidence concerning the unpatentability of dependent claims 2–22. Pet. 50–72. Patent Owner does specifically address the challenge to these claims. Prelim. Resp. 23. Having determined that Petitioner has shown a reasonable likelihood of prevailing with respect to claim 1, it is unnecessary to address these additional claims.

E. 35 U.S.C. § 102 – Martelliere

Petitioner argues that claims 23 and 24 are anticipated by Martelliere. Pet. 13–18. Patent Owner argues, and we agree, that Martelliere does not teach all of the limitations of claims 23 and 24. Prelim. Resp. 11–14. Martelliere’s sole figure, modified by Petitioner, is reproduced below. Pet. 16.



The above figure shows a vacuum, with a container “a” (the letter-labeling is rotated sideways), highlighted in purple by Petitioner, designed to collect dust. Petitioner has also added the term “container wall” with an arrow to the outside of the container. Finally, Petitioner added the term “latch” with an arrow pointing to one of two latches outlined in black.

Martelliere does not appear to teach “the dirt collection chamber having an openable door,” as required by both claims. The Petition itself does not directly address this claim language. *See* Pet. 15–17. The Petition argues that the bottom of Martelliere’s container is a dirt collection chamber, and then argues that container itself is an openable door. *Id.* The Petition does not address how this teaches a “dirt collection chamber *having* an openable door.”

Martelliere does not appear to teach the claimed limitation because the bottom of the container, noted by Petitioner as the claimed “dirt collection chamber,” does not appear to have an openable door. Further, if Petitioner is arguing that the entire container is the dirt collection chamber, then this improperly reads “openable door” out of the claim. *See* Prelim. Resp. 13. In the context of the claim language, it is improper to rely on the same structure, the “container,” as both the “dirt collection chamber” and the “openable door.” In the same way, one of skill in the art would not understand Martelliere’s container as having a container. Rather, the claims require “the dirt collection chamber hav[e] an openable door.”

Along this same line of reasoning, claim 24 also requires “the openable door covers an end of the dirt collection chamber.” The Petition states “Martelliere’s ‘**container**’ ‘**wall**’ (the openable door) covers the front end of ‘**container a**’ (the dirt collection chamber).” Pet. 17–18. Here again, if the container is the dirt collection chamber, how can the container cover an end of itself. The Petition, thus, reads this limitation out of the claim.

Claim 23 also requires “the door is openable when the dirt collection chamber is mounted to the hand vacuum cleaner.” The Petition argues that “[a] POSA would have understood a user could unlatch one of Martelliere’s two **latches** to pivot open Martelliere’s ‘**container**’ ‘**wall**’ while the dirt

collection chamber (‘**container a**’) remains mounted to the hand vacuum cleaner via the other **latch**.” Pet. 17. Petitioner’s declarant explains that when detaching the container, the container “is pivotable—at least to some degree” and so one of skill in the art would understand the container to be mounted to the vacuum cleaner. Ex. 1002 ¶ 101. This statement implies that there might be a crack or opening before full detachment, which appears to be speculation. Further, we do not credit declarant’s assertion that one of skill would consider this to be an openable door when the dirt collection chamber is mounted to the hand vacuum cleaner. As described by the declarant, one of ordinary skill would understand this to be merely detachment of a dust bin. *Id.*

For at least the above reasons, the Petition does not show how Martelliere teaches all of the limitations of claims 23 and 24.

F. 35 U.S.C. § 103 – Martelliere, IPVG

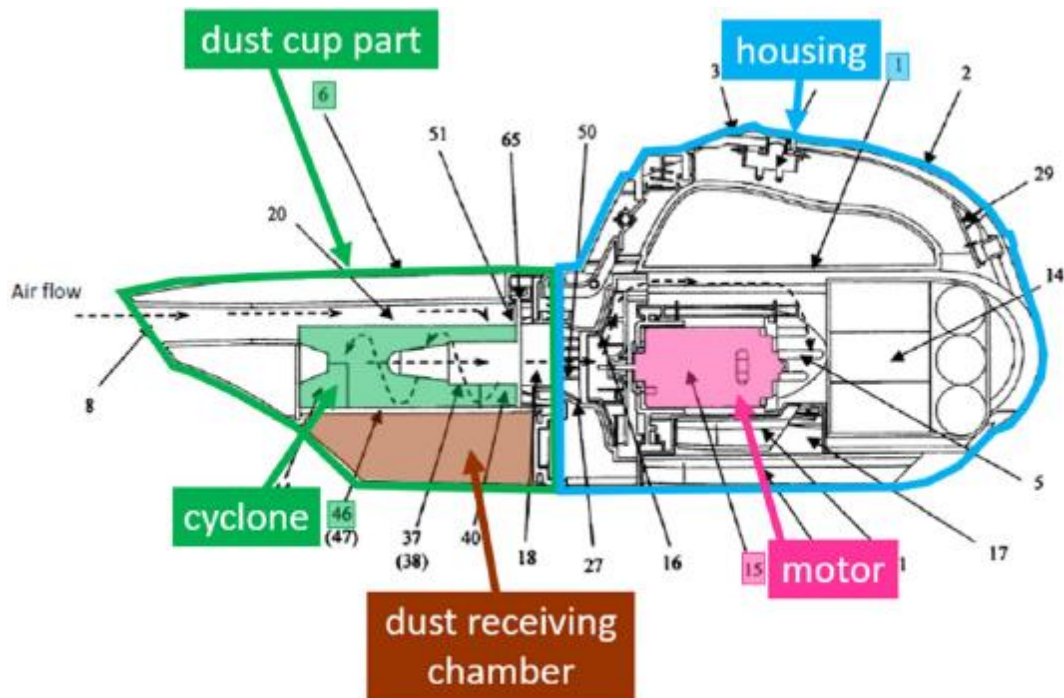
Petitioner argues that the combination of Martelliere and IPVG renders obvious claims 23, 24. Pet. 73–77. Patent Owner argues that Petitioner has not demonstrated a reasonable likelihood of success showing that the independent claims are unpatentable. Prelim. Resp 23–25.

As noted by Patent Owner, the full basis of this ground is unclear. *Id.* at 23–24. The Petition does not address most of the limitations of claims 23 and 24. See Pet. 73–77. The Petition does imply that this ground builds on the Martelliere anticipation ground. *Id.* at 73. However, the ground does not make sufficiently clear which aspects of Martelliere or IPVG the Petition is relying on to meet each claim limitation. As noted above, the Petition does not show how Martelliere alone teaches all of the limitations of claims 23 and 24. We decline to guess as to Petitioner’s full position on the combination of Martelliere and IPVG.

G. 35 U.S.C. § 103 – Jianan, Khalil

Petitioner argues that the combination of Jianan and Khalil renders obvious claims 1–25. Pet. 77–113. Patent Owner argues that Petitioner has not demonstrated a reasonable likelihood of success showing that the independent claims are unpatentable. Prelim. Resp 25–30.

Jianan’s handheld vacuum cleaner, from Figure 3, is shown below, as marked-up by Petitioner. Pet. 78.

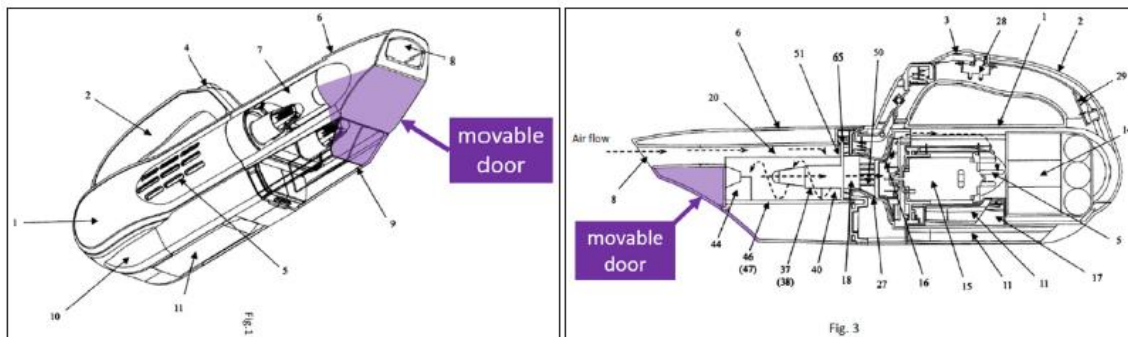


The above Figure was modified by Petitioner to highlight the following components: the housing outlined in blue, the dust cup part outlined in green, the motor in pink, the cyclone in green, and the dust receiving chamber in brown. *Id.*

The Petition relies on Jianan for most aspects of the independent claims. *See id.* at 77–90. The Petition relies on Khalil for teaching a hinged dirt cup door at the rear of the handheld vacuum. *Id.* at 78–82, 85–88. In particular, the Petition argues that “[t]o implement Jianan’s ‘movable door

on the dust collection chamber’ teachings, a POSA would have substituted Khalil’s detailed dirt-cup door teachings of using an end-wall as a door, including its hinged door-opening mechanism, for the front wall of Jianan’s hand vacuum cleaner (where Jianan’s dirt cup is located).” Pet. 80–81. Petitioner then argues that it would have been at least obvious to try hinges on Jianan’s door to the dust collection chamber. *Id.* at 81.

After making the above statements, the Petition proposes a larger modification to Jianan that is unexplained and only illustrated in the below figure. *Id.*



In the above Figure, Petitioner has combined Figures 1 and 3 from Jianan and in purple its proposed modification to Jianan of adding a movable door. As will be noted in the above, the Petition discusses “implement[ing] Jianan’s ‘movable door on the dust collection chamber’” (*id.* at 80), but Petitioner’s modification instead converts essentially the entirety of a side of the bottom into a door, covering the dust collection chamber and the cyclone chamber.

The Petition later asserts that “a POSA would have understood Jianan’s openable door opens both the cyclone and the dust-collection chamber” and that this would allow removal of “fibrous materials (e.g., hair and string).” *Id.* at 86. It is unclear whether Petitioner is arguing that this is a reason why Jianan would be further modified.

If this is the reason to further modify Jianan, it is unclear whether Petitioner is suggesting that fibrous materials cannot be removed from the cyclone. The Petition later discusses how the cyclone chamber and the dust collection chamber are connected through an opening. *Id.* at 91–92. It is unclear whether Petitioner is suggesting that fibrous materials cannot be removed through this opening, even when the dust collection chamber has a door providing access. At this stage we do not determine whether the Petition provides sufficient reasons to modify Jianan, or whether Petitioner’s reasoning is largely hindsight.

Patent Owner also argues that, consistent with the prosecution history, Petitioner points to a sidewall of Jianan, rather than identifying a front wall as required by the claims. Prelim. Resp. 28–29. We encourage Petitioner to address why the identified structure of Jianan reads on a front end having a front wall, and not on a side wall.

H. 35 U.S.C. § 102 – Butler

Petitioner argues that claims 23 and 24 are anticipated by Butler. Pet. 18–24. Patent Owner argues that Butler does not teach all of the limitations of claims 23 and 24. Prelim. Resp. 15–20.

Patent Owner first argues that Petitioner is combining different embodiments of Butler, which is improper for an anticipation ground. *Id.* at 15–17. In particular, Patent Owner argues that “Petitioners point to the alleged ‘chamber emptying’ feature of ‘dirt receptable 214,’ which is a component of the Figure 2A embodiment, and the alleged ‘removab[ility]’ of ‘bottom wall 522,’ which is a component of the Figure 5 embodiment.” *Id.* at 16–17.

It is unclear why the Petition is citing to Butler’s embodiment of an “access panel or door” in the housing that allows for a dirt receptable to be

removed and then emptied, as this does not appear relevant to the claims at issue. *See* Pet. 22–23. We agree with Patent Owner that combining separate embodiments in an anticipation ground can be improper and that the Petition does not explain how it is attempting to combine or rely on these separate embodiments of the reference.

At the same time, we note that the Petition primarily cites to Butler Figure 5 for teaching the features of claims 23–24 (*see* Pet. 19–24), including with reference to a “‘removable’ front wall” (*id.* at 23 (citing Ex. 1020, 21:19–21, Fig. 5)).

Patent Owner next argues that the Petition does not show that the “‘removable’ front wall” is an openable door as required by the claims. Prelim. Resp. 17–20. We agree that the Petition, in conclusory fashion, merely asserts that “[a] POSA would have understood the ‘removable’ front wall (‘bottom wall 522’) of Butler’s ‘dirt receptacle 514’ is an openable door.” Pet. 23. This is insufficient as it lacks any explanation for why a wall is a door.

We further note, and agree with Patent Owner, that “openable door” is the relevant term, and not “door” alone. *See* Paper 9. The Petition fails to construe this term or explain how a removable wall is an openable door.

III. CONCLUSION

For the foregoing reasons, we have determined that there is a reasonable likelihood that the Petitioner would prevail with respect to at least one claim challenged in the Petition. We, therefore, institute trial as to all challenged claims on all grounds stated in the Petition.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, *inter partes* review as to claims 1–25 of U.S. patent 8,607,407 B2 is instituted; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial; the trial will commence on the entry date of this decision.

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