

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DYSON TECHNOLOGY LIMITED AND DYSON, INC.,
Petitioners,

v.

OMACHRON INTELLECTUAL PROPERTY INC.,
Patent Owner.

Case No. IPR2024-01151
U.S. Patent No. 11,910,984

PATENT OWNER'S PRELIMINARY RESPONSE

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TABLE OF ABBREVIATIONS

Abbreviation	Term
'984 Patent	U.S. Patent No. 11,910,984 (Ex1001)
Dimbylow	U.S. Patent Publication No. 2017/0079489 to Dimbylow
Howes	U.S. Patent No. 8,021,453 to Howes
IPVG	U.K. Patent Publication No. GB283,179 to Inventia Patent-Verwertungs-Gesellschaft
Nakai	U.S. Patent No. 7,175,682 to Nakai et al.
Sunderland	PCT Publication No. 2013/117901 to Sunderland et al.
Challenged Claims	Claims 1–18 of U.S. Patent No. 11,910,984
Fig.	Figure
IPR	<i>inter partes</i> review
Patent Owner	Omachron Intellectual Property Inc.
Petitioners	Dyson Technology Limited and Dyson, Inc.
POSITA	person[s] of ordinary skill in the art

I. INTRODUCTION

Patent Owner Omachron Intellectual Property Inc. provides the following Preliminary Response to the Petition filed by Dyson Technology Limited and Dyson, Inc. requesting *inter partes* review of claims 1–18 of U.S. Patent No. 11,910,984.

Petitioners had the burden of showing that there is a reasonable likelihood that it would prevail with respect to at least one of the challenged claims. 35 U.S.C. § 314(a). Petitioners did not meet that burden. In fact, there are fundamental and irreconcilable differences between Petitioners' references and the challenged claims of the '984 Patent.

Petitioners first rely on a combination of Dimbylow and Howes. Although Dimbylow discloses a surface cleaning device with an openable door of a cyclone unit (as claimed), neither Dimbylow nor Howes teaches or renders obvious the claimed “actuator” of a lock securing the door, which is “spaced towards the rear end of the cyclone” (independent claim 1) or “located at an elevation of an upper end of the pistol grip handle and forward of the pistol grip handle” (independent claim 10). Furthermore, in addition to missing a claimed feature, Petitioners' proposed combination of Dimbylow and Howes (two different types of vacuums) is flawed and illogical.

Petitioners then rely on a combination of IPVG and Nakai. But the proposed combination results in a Franken-vacuum that is inoperable as a vacuum. Indeed, in

the attempt to recklessly combine embodiments of IPVG and Nakai, which are of different sizes and form factors and are almost 80 years apart, Petitioners created a vacuum with no air inlet at all but, rather, two air outlets on opposite ends, with no functional airflow at all. No POSITA would have been motivated to create such a nonsensical and nonfunctional model.

For at least these reasons and those set forth below, Petitioners fail to show a reasonable likelihood of success on any Challenged Claim, and the Board should deny institution of IPR.

II. CLAIM CONSTRUCTION

A claim subject to IPR shall be construed using the same standard as in a civil action. 37 C.F.R. § 42.100(b). The Board need only construe terms “to the extent necessary to resolve the controversy.” *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017). At this stage, Patent Owner does not submit any terms for construction. Patent Owner reserves the right to subsequently submit claim terms for construction should the Board institute IPR.

III. LEVEL OF ORDINARY SKILL IN THE ART

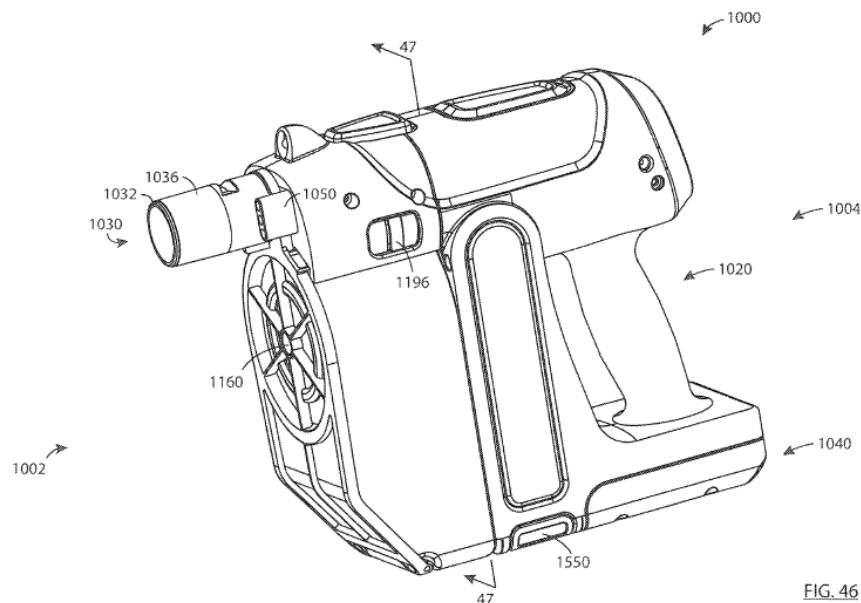
Solely for the purpose of this Preliminary Response, Patent Owner does not challenge Petitioners’ proposed definition of a POSITA. Patent Owner reserves the right to provide an alternative definition of a POSITA if IPR is instituted.

IV. TECHNICAL BACKGROUND

A. Summary of the '984 Patent

The '984 Patent is directed to a hand vacuum cleaner with a cyclone unit having a cyclone with a horizontal cyclone axis of rotation. The front end of the cyclone unit comprises a front door that is moveable between a closed position and an open position. A lock secures the front door in the closed position, the lock comprising an actuator, wherein the actuator is spaced towards the rear end of the cyclone. Ex1001, Abstract, 1:48–2:15.

The actuator for opening/releasing the openable portion of the cyclone assembly may be provided on the cyclone assembly. *Id.* 23:20–23. In one embodiment, the actuator 1196 is spaced towards the rear end of the cyclone.



Id., Fig. 46.

B. Overview of Asserted References

1. Dimbylow

Dimbylow is a 2017 U.S. patent application assigned to Dyson, disclosing a handheld vacuum cleaner with a cyclonic separating unit having a first end and a second end, where the cyclonic separating unit is arranged to extend away from the handle so that the first end is further from the handle than the second end. Ex1005, Abstract. This arrangement, according to Dimbylow, is “compact” and “results in a versatile vacuum cleaner.” *Id.*, ¶10. While Dimbylow discloses an openable end wall that is held in place by a “catch,” it does not provide any details on how the “catch” operates, nor does it disclose any sort of “actuator” for opening the door. *Id.*, ¶37.

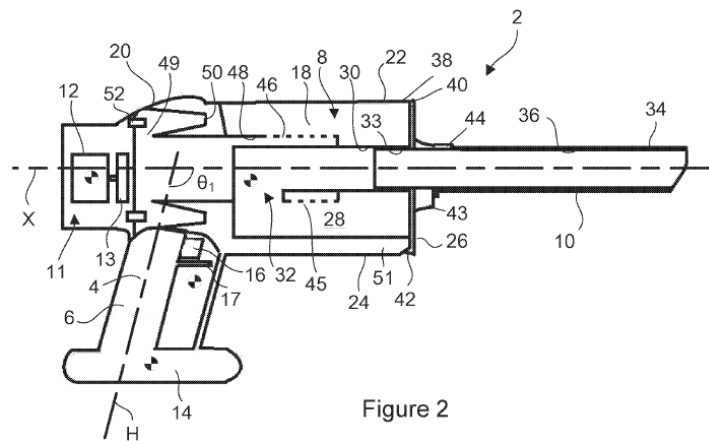


Figure 2

Id., Fig 2.

2. Howes

Howes is a U.S. patent claiming a 2006 priority date that discloses an upright bagless vacuum cleaner with a collection chamber base wall that is hinged and a dividing wall separating first and second stage collection regions. Ex1006, Abstract, 2:7–28.

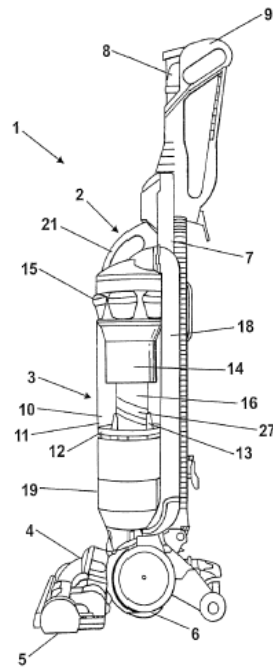


Fig. 1

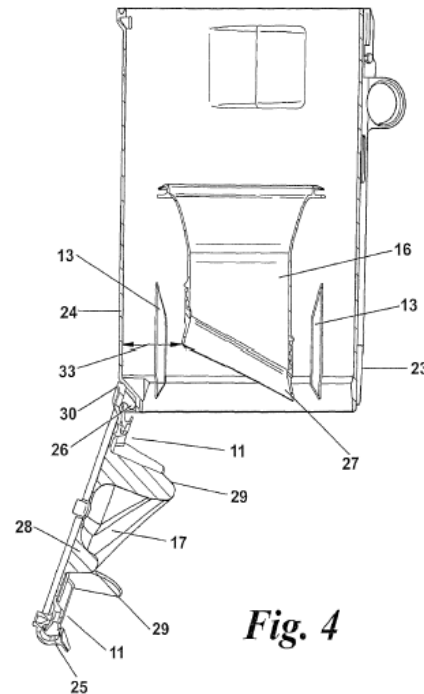


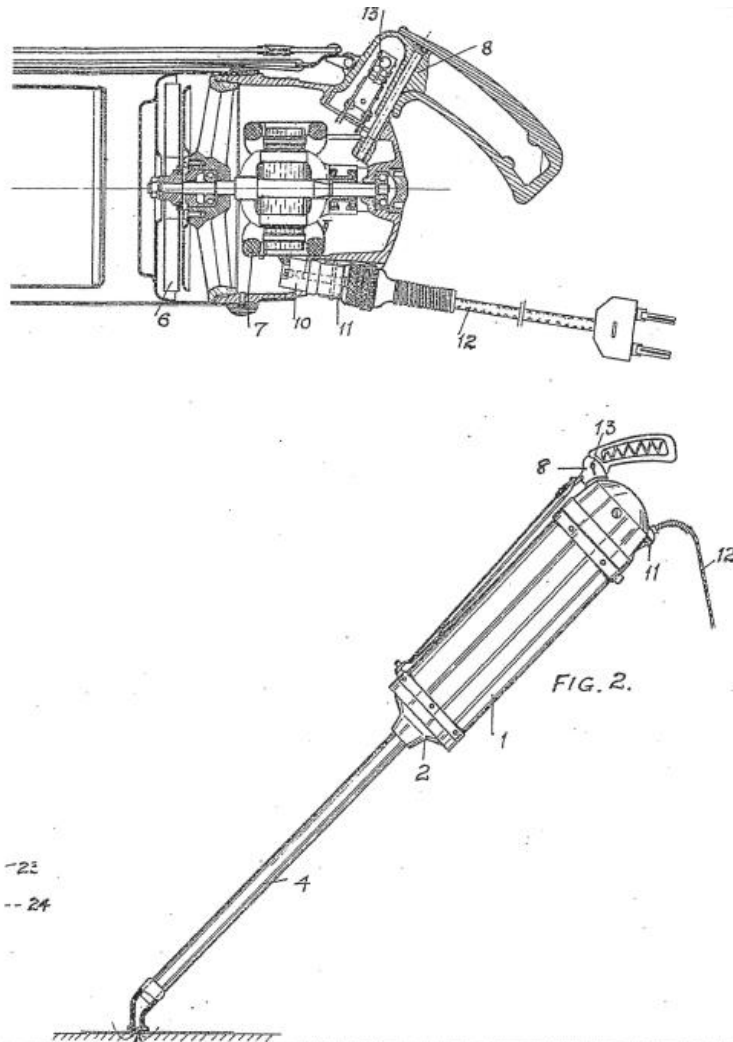
Fig. 4

Id., Figs. 1, 4.

3. IPVG

IPVG is a 1928 UK 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.” Ex1007, 1:10–21, 1:34–41. IPVG describes a “one-piece insulating cover adapted to cover

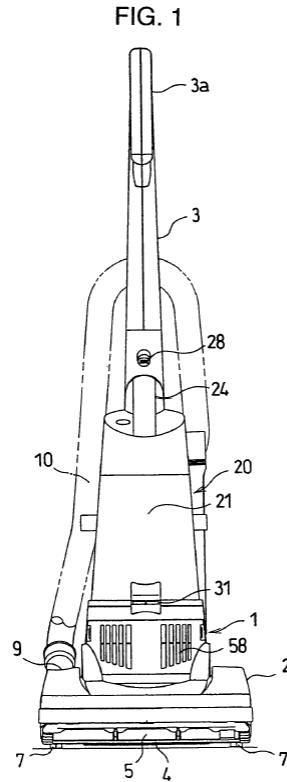
the handle,” including a conductive screw that secures the handle to the casing of the vacuum cleaner. *Id.*, 1:34–41.



Ex1006, Fig. 2.

4. Nakai

Nakai is a U.S. patent claiming a 2002 priority date that discloses an upright vacuum cleaner with mesh-filtration non-cyclonic separator with an openable bottom lid. Ex1008, Abstract, 1:51–2:17, 6:16–35.



Id., Fig. 1.

5. Sunderland

Sunderland is a PCT publication, assigned to Dyson, having a publication date of 2013 and discloses a handheld vacuum cleaner with a handle and a battery pack. Ex1017, Abstract, 2:1–3:15.

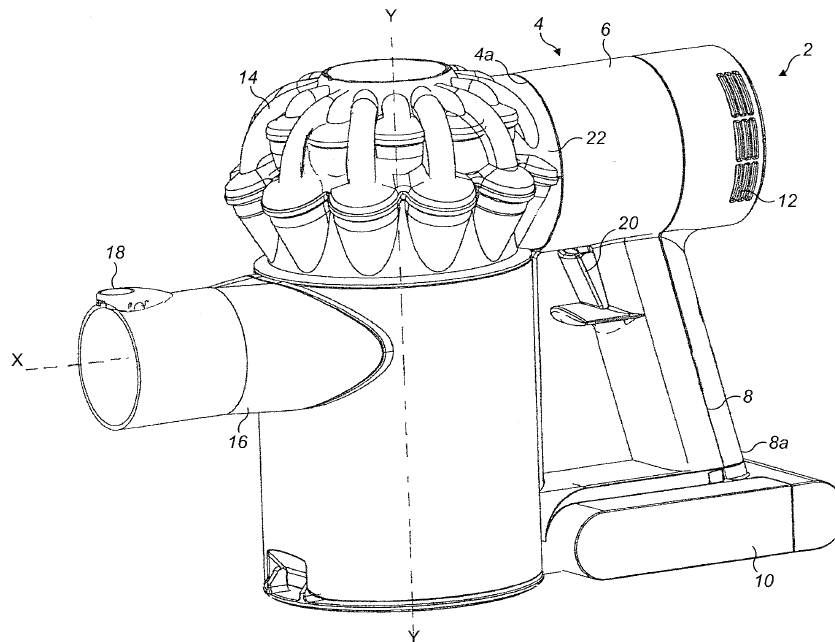


FIG. 1

Ex1017, Fig. 1.

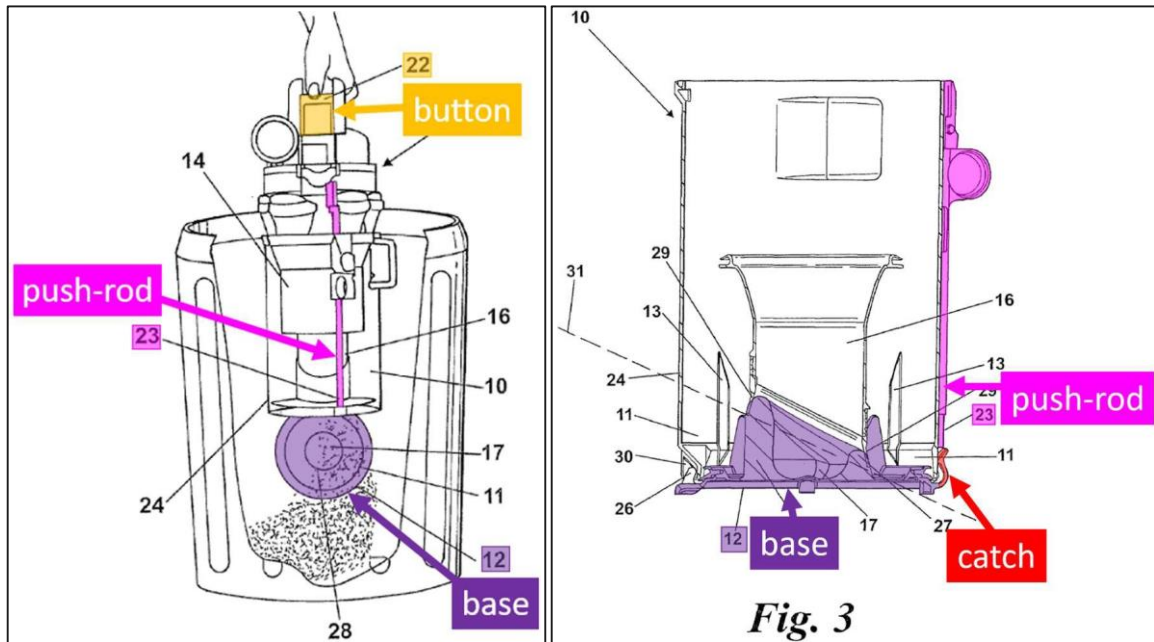
V. SPECIFIC GROUNDS OF UNPATENTABILITY

A. Petitioners Failed to Show that Dimbylow in Combination with Howes Renders Obvious Challenged Claims 1–18 (Ground 1)

1. Dimbylow in view of Howes does not teach the claimed “a lock securing the front door in the closed position, the lock comprising an actuator, wherein the actuator is spaced towards the rear end of the cyclone” [1d] / “a lock securing the front door in the closed position, the lock comprising an actuator, wherein the actuator is located at an elevation of an upper end of the pistol grip handle and forward of the pistol grip handle” [10e]

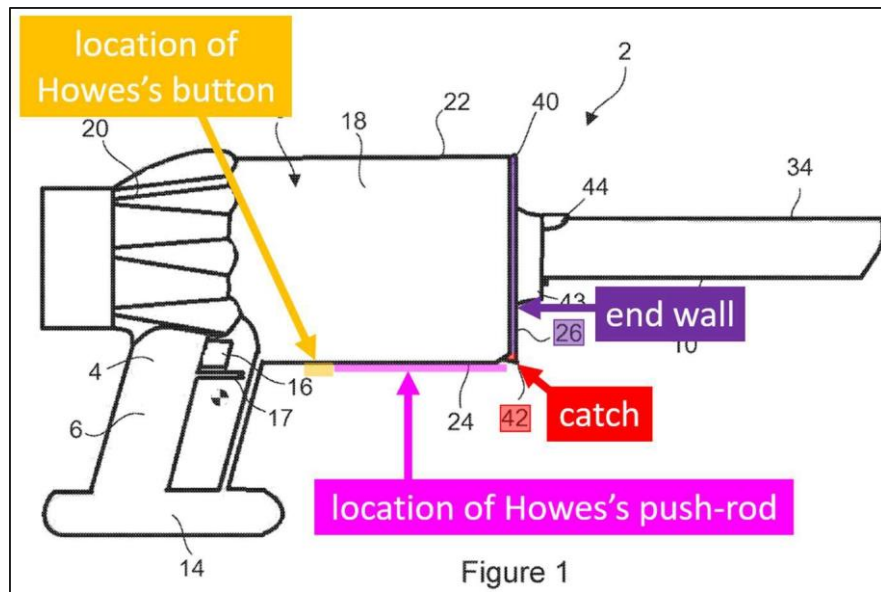
For this Ground, Petitioners rely solely on Howes for the purported disclosure of an “actuator” as required by the limitations identified in the heading (hereinafter collectively or separately “actuator limitations”). Pet., 29–34. Although Dimbylow

includes an openable “end wall 26,” it discloses only a “catch 42” for holding the wall in a closed position; it does not disclose any actuator or opening mechanism of such a catch. Ex1005 ¶37, Fig. 1; Pet., 29–30. Petitioners thus turn to the “push button 22” of Howes for the claimed actuator:



Ex1006, Figs. 2b and 3 (annotated by Petitioners). However, as Fig. 2b of Howes clearly disclose, this “button 22” is located well above the upper end of the cyclonic separator in an upright configuration. In other words, it is not, for example, “spaced towards the rear end of the cyclone.”

Undeterred and guided by hindsight, Petitioners conveniently clip this “button” out of Howe’s disclosed location and move it to be “spaced towards the rear end of the cyclone” and “at an elevation of an upper end of the pistol grip handle and forward of the pistol grip handle” in the context of Dimbylow’s embodiment:

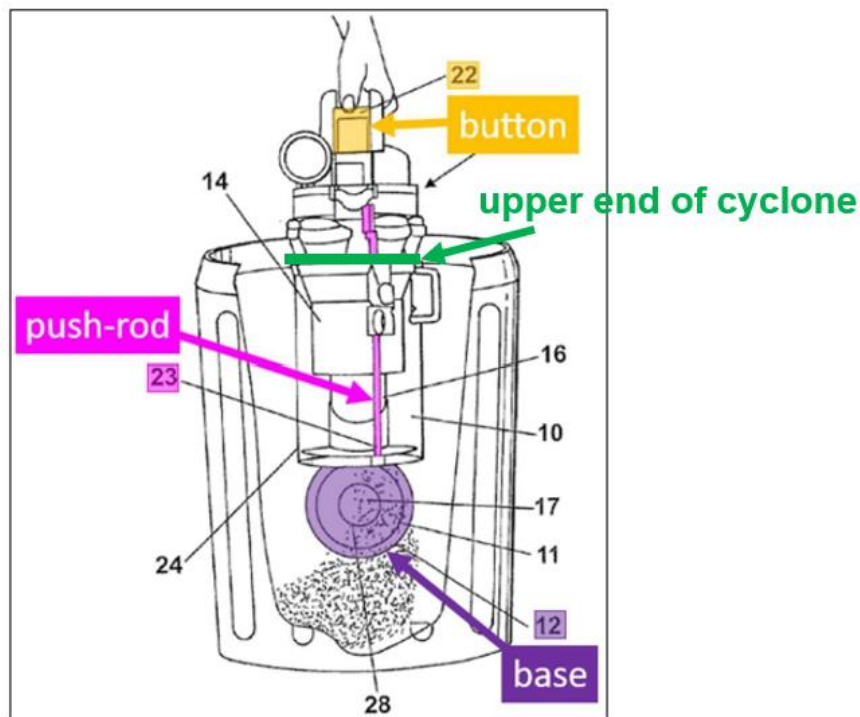


Ex1005, Fig. 1 (annotated by Petitioners to show Petitioners' proposed modification)

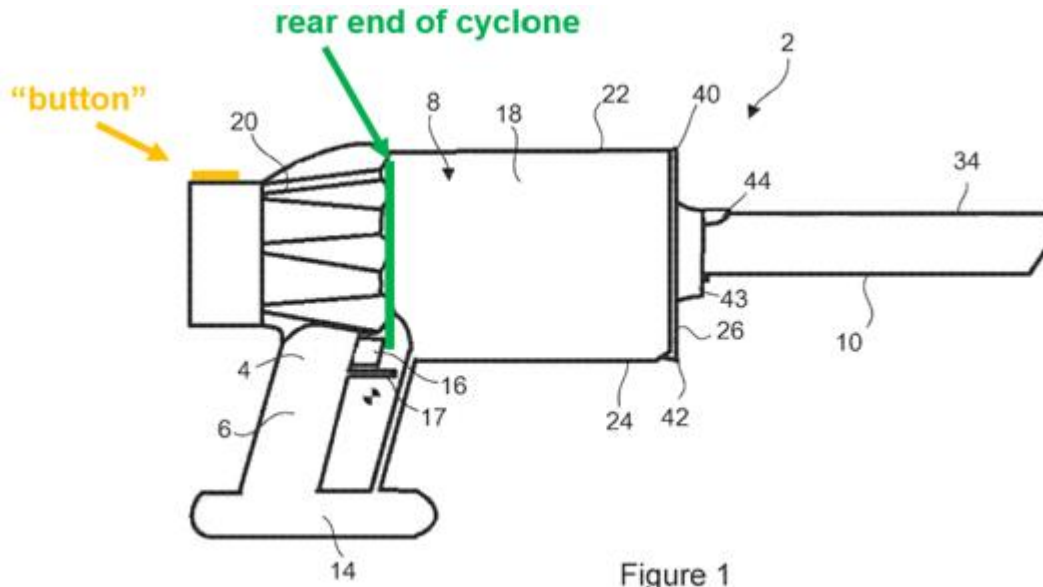
But Petitioners cite to nothing in either Howes or Dimbylow teaching or suggesting that the actuator (“botton”) would be placed where Petitioners propose it to be. Instead, Petitioners conclusorily claim that “[a] POSA reading Dimbylow and Howes would have found it obvious to locate Howes’s actuator in the convenient location identified above—spaced towards the rear end of the cyclone ” because it would be a “convenient” location, while citing nothing in the references (and only a parroting declaration). Pet., 33. Similarly, Petitioners conclusorily claim that “[a] POSA reading Dimbylow and Howes would have found it obvious to conveniently locate the ‘button 22’ (actuator) at an elevation of an ‘upper portion’ (upper end) of Dimbylow’s ‘handle 6,’ and forward of ‘handle 6’” while citing nothing in the references. Pet., 33–34. Petitioners further cite Dimbilow’s disclosure that “[a] trigger guard 17 extends forwardly from the handle below the trigger 16” to support

its claim that “the actuator is forward of Dimbylow’s ‘handle 6.’” Pet., 34. But the cited sentence from Dimbylow has nothing to do with the location of the actuator. Dimbylow does not even disclose an actuator.

In fact, even assuming that a POSITA would have modified Dimbylow in view of Howes’ base-opening button 22, and even assuming that a POSITA could find the upright cyclonic separator according to Howes analogous to the hand vacuum separator according to Dimbylow, it is clear from Fig. 2b of Howes that the “button 22” is located above the upper end of the upright cyclone, which is analogous to a location rearward of the rear end of the horizontal cyclone in Dimbylow’s embodiment.



Ex1006, Fig. 2b (annotated by Petitioners, further annotated by Patent Owners using the green text and annotations to show the upper end of a cyclone). Thus, in other words and as shown below, if the button of Howes were applied to Dimbylow, the “actuator” would actually be positioned at the top, rear of the hand vacuum cleaner:



Ex1005, Fig. 1 (annotated by Patent Owners using the gold text and annotations to show the location of button analogous to Howes' disclosure and using the green text and annotations to show the location of the rear end of cyclone analogous to Howes).

Therefore, Petitioner's proposed combination improperly relocates the “button” from Howes forward and downward to its current location, as shown below:

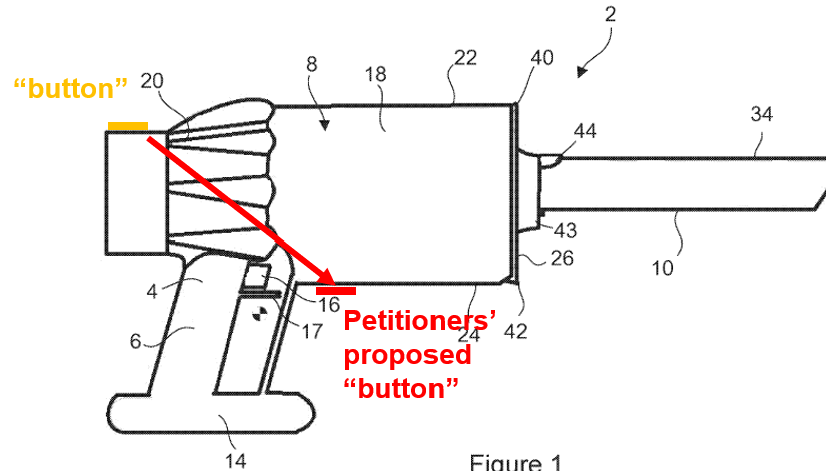


Figure 1

Ex. 1005, Fig. 1 (annotated by Patent Owners using red text and annotations to show Petitioners' proposed relocation of the button and using the gold text and annotations to show the location of button analogous to Howes' disclosure). This relocation is completely unexplained in the Petition and thus, Petitioner failed to identify any motivation or rationale of why a POSITA would have moved the button from the location in Howes to where the Petition proposes it to be. *See* Pet., 31–34. Without any teaching or suggestion from either Dimbylow or Howes, Petitioners' proposed combination therefore fails to establish an essential claim element.

Thus, Petitioners failed to show that elements [1d] or [10e] are taught by its proposed combination of Dimbylow and Howes, even if a POSITA was motivated to combine the two references.

2. Petitioners failed to show that a POSITA would have been motivated to combine Dimbylow and Howes, with reasonable expectation of success

Petitioners' Ground 1 fails for the additional reason that Petitioners failed to demonstrate a motivation to combine Dimbylow and Howes. Rather, Petitioners provide conclusory statements about cherry-picked substitution and alleged advantages of modifying Dimbylow based on Howes's disclosure without providing any explanation for such conclusory statements.

For example, Petitioners assert that a POSITA would have combined Dimbylow and Howes in a very specific manner as discussed above. But the only rationale Petitioners provided for the combination was that Dimbylow does not teach how a user releases its "catch." Pet., 18. Petitioners took Dimbylow's silence as a free canvas for hindsight-based cherry-picking from Howes. Nothing in Dimbylow or Howes, however, suggests that a push-rod from a detachable dirt collection chamber of an upright vacuum can or should be retro-fitted to a handheld vacuum. Dimbylow does not identify "catch 42" as a problem or issue to be resolved.

In fact, it would have been difficult for a POSITA to combine Dimbylow and Howes because Dimbylow envisions attaching accessories to the hand vacuum, such as a cleaning tool 10. Howes, by contrast, discloses a different form factor of vacuum cleaner, *i.e.*, an upright vacuum cleaner. The removable dirt collection chamber according to Howes is mounted to a main chassis 2, above a motor housing

19. Howes does not disclose an attachable cleaning tool at all. Therefore, there is no evidence a POSITA would have looked to Howes to fill in alleged gaps in Dimbylow. Furthermore, it is clear that Howes' dirt collection chamber is intended to be used in an upright orientation. For example, Howes teaches that "[t]he dirt and dust separated here falls under **gravity** towards the base 12 of the chamber 10 through a conduit formed by a dividing wall 16." Ex1006, 3:47–50 (emphasis added). A POSITA, without more, would not take a feature from Howes's direct collection chamber and simply rotate it horizontally before plugging it into a handheld vacuum.

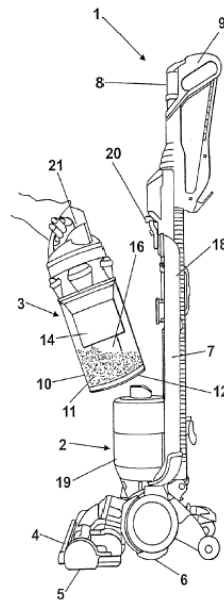


Fig. 2a

Ex1006, Fig. 2a.

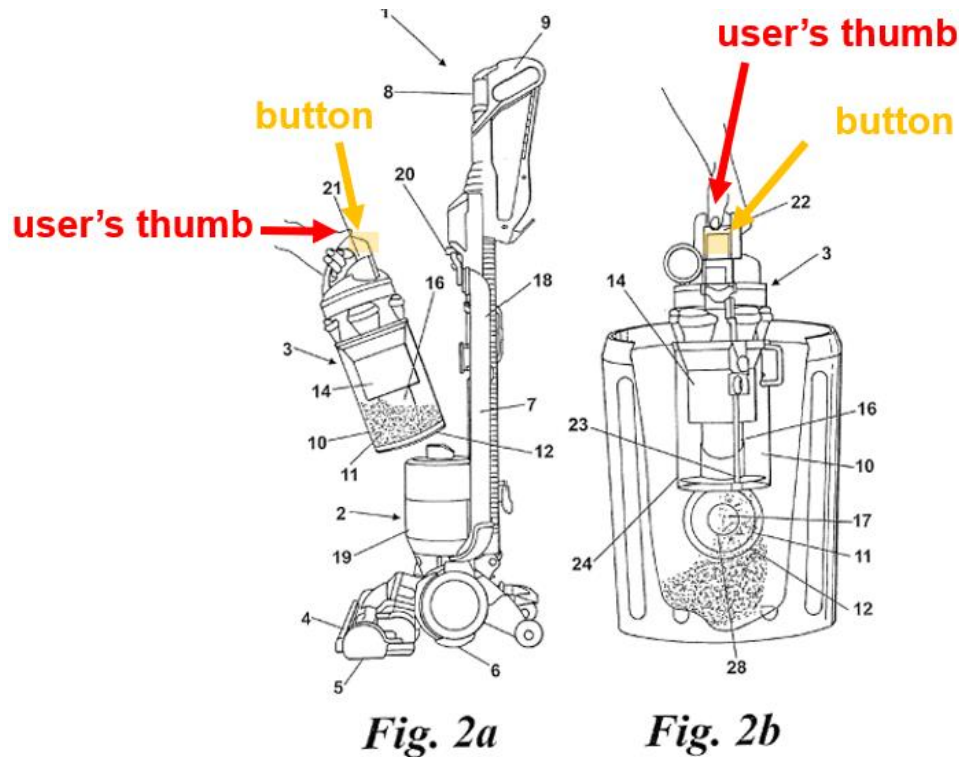
Each of Petitioners' alleged rationales for this combination are merely conclusory statements with no explanation for why the combination should be conducted in the specific proposed manner, why the alleged advantages of the

pushrod mechanism apply to the handheld vacuum according to Dimbylow, or why the modifications would improve the vacuum of Dimbylow.

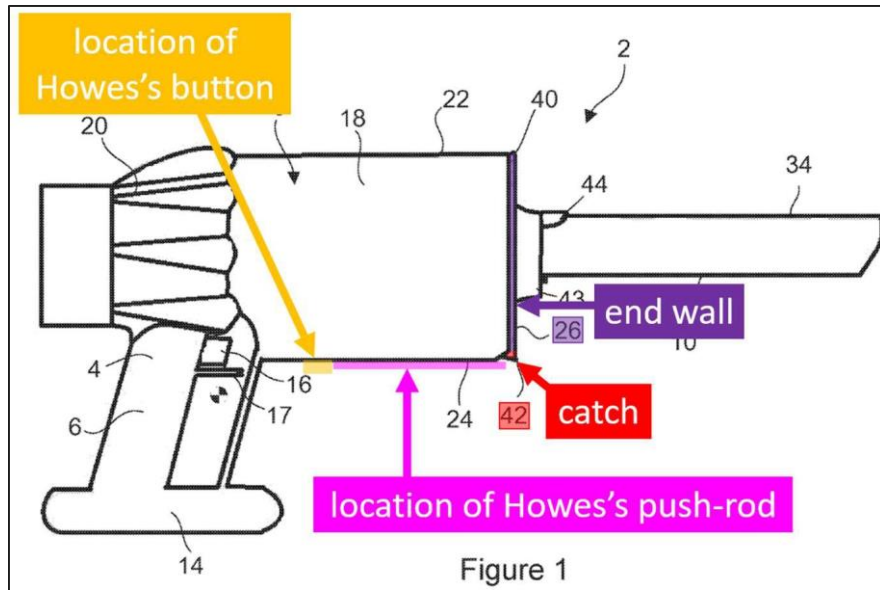
To support these alleged rationales for combining these two references, Petitioners cite the Declaration of Mr. Giachetti (Ex1002). However, these paragraphs also merely make conclusory statements about simple substitution and alleged advantages without providing any explanation for such conclusory statements. *E.g.*, Ex1002, ¶¶78–91. For example, neither Petitioners nor Mr. Giachetti provide any explanation for why a POSITA, reading Dimbylow, would have been motivated to install a push-rod beyond the hindsight-informed statement that such set up would not necessitate a user to place his or her hand near the dirt. *See id.* It does not explain why the very specific type of push-rod would have been used, why a POSITA would place it where the claim requires or why the POSITA would have looked to Howes.

Further, as discussed above in Section V.A.1, the Declaration of Mr. Giachetti does not explain why specifically a POSITA would have taken the “button” and “push-rod” according to Howes and place them into an embodiment according to Dimbylow exactly where the claims require other than a conclusory reason of “convenience.” *See id.*, ¶¶78–91, 120–125. Mr. Giachetti’s claim of “convenience” is unexplained and contradictory to Howes’ disclosure. As disclosed by Figs. 1b and

2b, the “button 22” is apparently intended to be operated by the user’s thumb while the user grips the dirt container handle:



Ex1006, Figs 2a and 2b (annotated to show the button and the user’s thumb).
Mr. Giachetti and the Petitioners’ proposed location of the button is far out of reach from the user’s thumb, and it is not “ergonomic” or “convenient” to be operated by the user’s thumb as intended by Howes:



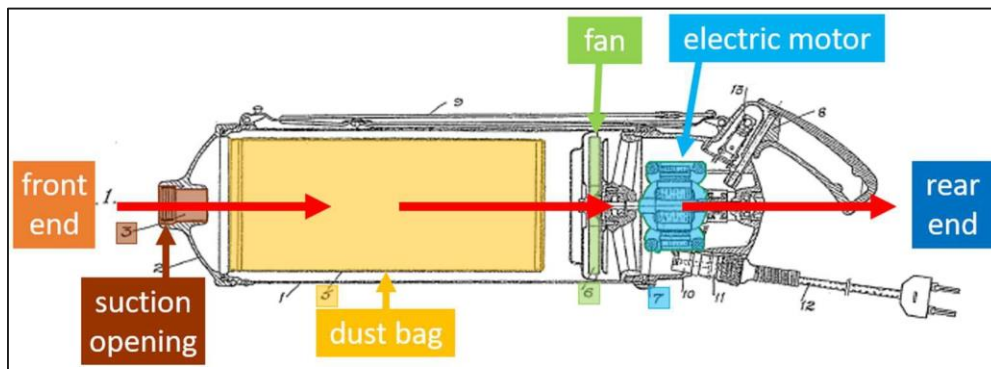
Ex1005, Fig. 1 (annotated by Petitioners showing proposed button location in gold color); *see also* Ex1002, ¶121; Pet., 30–34. Dr. Giachetti does not explain why a POSITA would have moved the button to where the Petitioners propose in contradiction to Howes.

Thus, Petitioners failed to meet their burden of showing that the Challenged Claims would have been obvious in view of Dimbylow in combination with Howes under Ground 1.

B. Petitioners Failed to Show that IPVG in View of Nakai or in Further View of Sunderland Renders Obvious Challenged Claims 1–18 (Grounds 2 and 3)

- 1. The combination of IPVG and Nakai according to the Petition is inoperative and does not have “an air flow passage extending from a dirty air inlet provided at the front end to a clear air outlet provided at the rear end” [1a]/[10a]**

IPVG is a 1928 UK patent directed to a stick vacuum cleaner having an “enclosed dust bag.” Ex1007, 1:10–21. Petitioners state that IPVG discloses an electric motor which causes the air to flow through the embodiment according to IPVG in the direction shown:



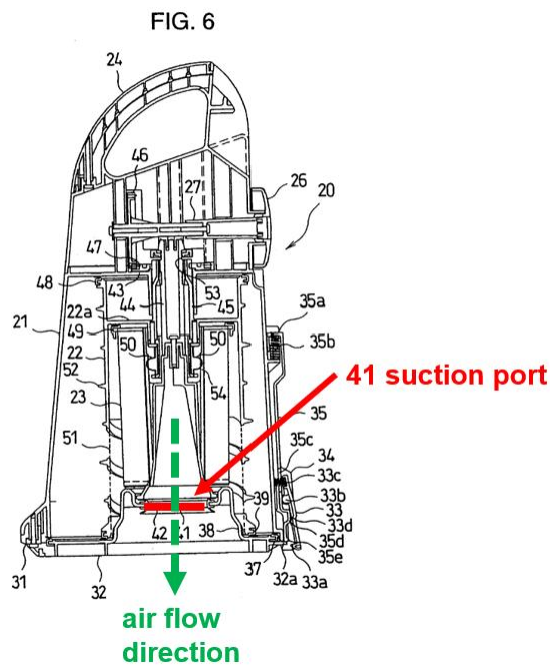
Ex1007, Fig. 1 (annotated by Petitioners to show the electric motor and air flow);
Pet., 66.

Nakai discloses an upright vacuum with a detachable dust collection unit. The Petition does not explain the air flow according to the disclosed embodiment of Nakai. On this issue, Nakai discloses as follows:

The clean air filtered by the dust collection unit 20 is discharged from the suction port 41 (of the dust collecting case 21) located below the cylindrical

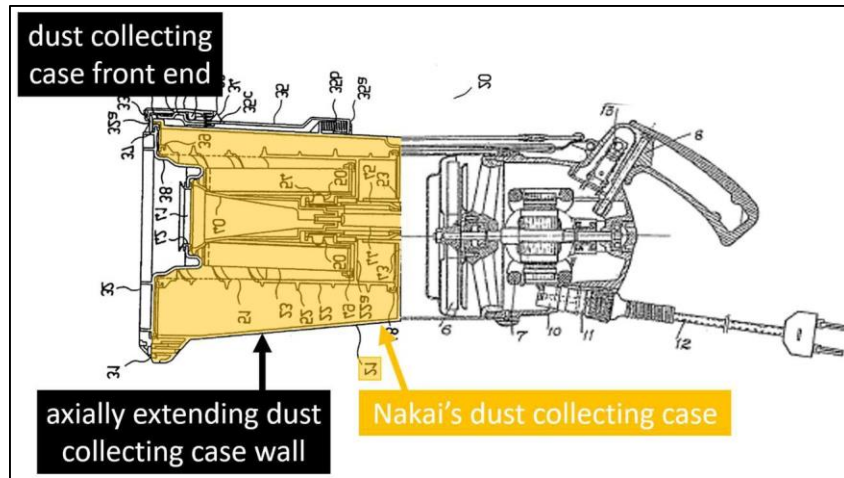
member 40 of the main filter 23. The air is then sucked into an electric fan (not shown), and exhausted, via an exhaust filter (not shown), from an outlet 58 formed in the lower front end of the main body 1.

Ex1008, 6:9–15. Therefore, in relevant parts, according to Nakai, the air discharges from the separator and dust collection through suction port 41, through an electric fan, and is then exhausted through outlet 58. “Suction port 41” is an air outlet of the separator, not an inlet.



Ex1008, Fig. 6 (annotated to show the suction port and the air flow direction).

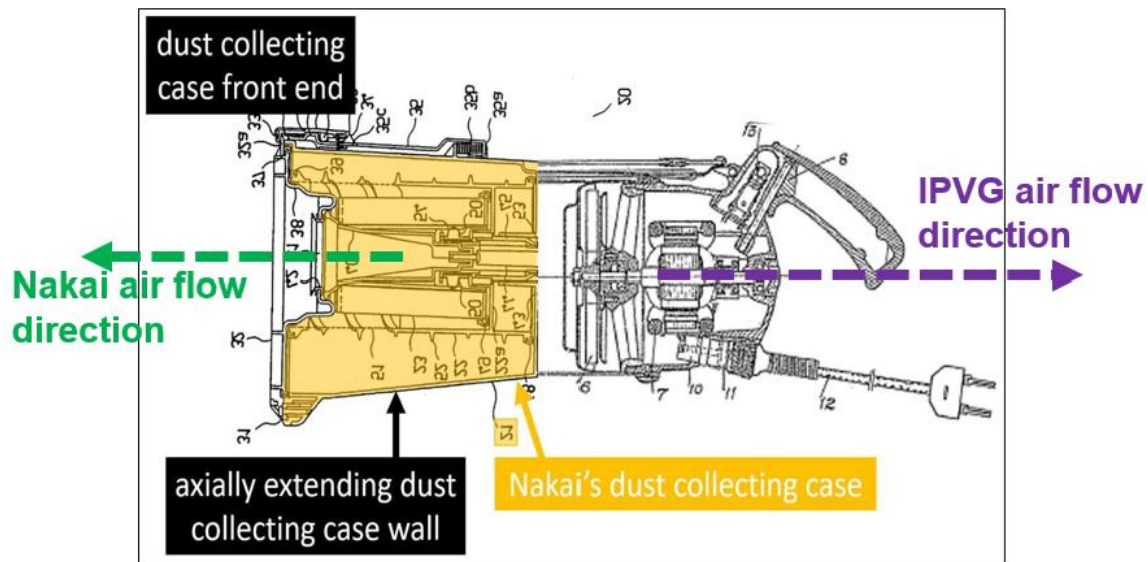
Petitioners propose to clip and paste the separator and dust collecting case according to Nakai onto the body of IPVG's embodiment, as shown below. *See, e.g., Pet., 71–77.*



Ex1007, Fig. 1 and Ex1008, Fig. 3 (merged, modified, and annotated by Petitioners to show the proposed combination); Pet, 75.

Petitioners, in their efforts to cherry-pick elements from two embodiments almost 80 years apart, creates a Franken-vacuum that is entirely nonsensical and nonfunctional: this combination **has two air outlets, no air inlets, and totally conflicting air flows.**

As explained above, according to Nakai, “suction port 41” is an air outlet of the separator; and Petitioners acknowledge that the airflow according to IPVG comes from the front end and exhausts from the rear end. Petitioner then proposes to take the suction port 41 and place it into the IPVG vacuum in the way as shown below. The problem with this combination is that the airflow flows out of the separator in two opposite directions and, notably, there is **no air inlet** at all (and the Petition does not attempt to identify one).



Ex1007, Fig. 1 and Ex1008, Fig. 3 (merged, modified, and annotated by Petitioners to show the proposed combination, further annotated by Patent Owners in green and purple to show air flow).

The combination therefore has no operational air flow and no “dirty air inlet provided at the front end” as the claims require. Therefore, Petitioners failed to show that elements [1a] or [10a] are taught by the combination.

Because the combination creates an inoperative device, it cannot establish obviousness. “If references taken in combination would produce a ‘seemingly inoperative device,’ we have held that such references teach away from the combination and thus cannot serve as predicates for a prima facie case of obviousness.” *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1354 (Fed. Cir. 2001) (internal citations omitted).

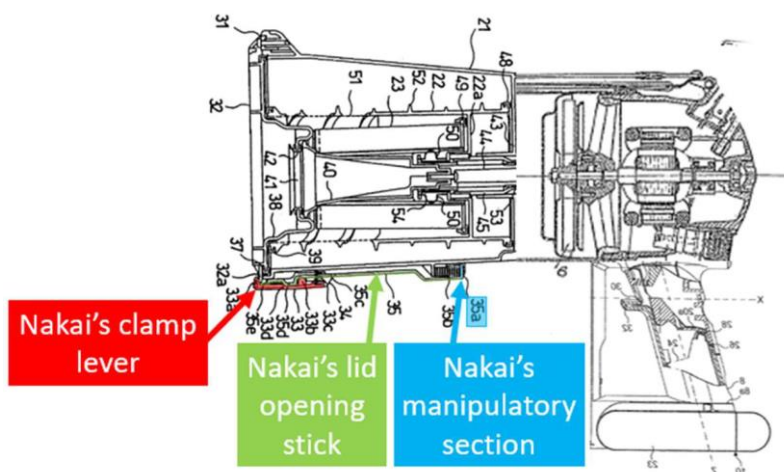
A POSITA would not have combined IPVG and Nakai as proposed in the Petition, because the combination is inoperative. Petitioner's expert's declaration does nothing to explain how the proposed combination could operate with two outputs and no inputs or explain why a POSITA would have combined IPVG and Nakai as proposed, while completely ignoring the contradictory air flows created in the proposed combination. *See, e.g.,* Ex1002, ¶¶ 182–198. Mr. Giachetti's declaration should be afforded no weight.

Petitioners failed to show that IPVG in view of Nakai renders obvious Challenged Claims 1–18 (Ground 2).

2. The proposed combination of Sunderland does not cure any deficiencies of IPVG and Nakai

As discussed above in Section V.B.1, the proposed combination of IPVG and Nakai is deficient, inoperative, and does not render any challenged claims obvious. In the Petition, Petitioners further rely on Sunderland for its purported teachings on the handle and battery packs. *See* Pet., 94–100. Further inclusion of Sunderland does not cure the deficiencies and inoperability of IPVG and Nakai identified above.

For example, Petitioners propose to further include the handle and battery pack as disclosed in Sunderland to the already inoperative Franken-vacuum:



Ex1007, Fig. 1; Ex1008, Fig. 3; Ex1017, Fig. 2 (merged and modified and annotated by Petitioners to show the proposed combination of IPVG, Nakai, and Sunderland); Pet., 99. As shown above, the inclusion of Sunderland does not cure the fact that this combination has no functional air flow, has no air inlet on the front end, has no air inlet at all, and is outright inoperative.

Thus, Petitioners failed to show that IPVG in view of Nakai further in view of Sunderland renders obvious Challenged Claims 1–18 (Ground 3).

VI. CONCLUSION

For the foregoing reasons, Petitioners failed to meet their burden of showing a reasonable likelihood that at least one of the Challenged Claims is unpatentable, and institution of *inter partes* review should be denied.

DATED: October 29, 2024

Respectfully Submitted,
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CERTIFICATION UNDER 37 C.F.R. § 42.24(d)

Under the provisions of 37 C.F.R. § 42.24(d), the undersigned attorney hereby certifies that this document complies with the type-volume limitations of 37 C.F.R. § 42.24(b). The word count of the foregoing Patent Owner's Preliminary Response is 3,378, according to the word count tool in Microsoft Word.

DATED: October 29, 2024

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CERTIFICATE OF SERVICE

The undersigned certifies service pursuant to 37 C.F.R. § 42.120 of a copy of this Patent Owner's Preliminary Response upon Petitioners by email on October 29, 2024, to the following email addresses of record:

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