

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. IPR2024-00690
U.S. Patent No. 10,117,550

PATENT OWNER'S PRELIMINARY RESPONSE

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TABLE OF ABBREVIATIONS

Abbreviation	Term
'550 patent	U.S. Patent No. 10,117,550 (Ex1001)
Butler	PCT Publication No. 2007/084543 to Butler et al.
Challenged Claims	Claims 1–28 of U.S. Patent No. 10,117,550
Fig.	Figure
IPR	<i>inter partes</i> review
Jansen	U.S. Patent Publication No. 2008/0189901 to Jansen
Martelliere	French Patent No. 1,094,603 to Martelliere
Neroni	U.S. Patent No. 4,473,923 to Neroni et al.
Patent Owner	Omachron Intellectual Property Inc.
Peter	Swiss Patent No. CH203,675 to Peter
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 1–28 of U.S. Patent No. 10,117,550.

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. Although Petitioners nakedly asserted that the claims are a “mish-mash of claimed features” that were “well-known, as early as the 1930s,” none of Petitioners’ references—whether part of an anticipatory or obviousness-based ground—disclose or render obvious the required configuration of an electrical connector with electrical cables extending rearward through the air treatment member, required in all of the Challenged Claims. Petitioners’ failure to identify this feature in *any* prior art reference, or to show a compelling reason it would have been obvious to a POSITA, dooms their challenge.

Anticipation requires that a prior art reference “must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements arranged as in the claim.” *Net MoneyIn, Inc. v. Verisign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008). Because Petitioners failed to identify at least one limitation in each Challenged Claim being present in the asserted art—notably, the electrical connector and electrical cable limitations—the anticipation ground fails.

Petitioners' obviousness grounds fare no better. For obviousness, a Petition must provide, with particularity, rationale to combine the teachings of the cited art and establish "whether the relevant skilled artisan had a motivation to combine pieces of prior art in the way eventually claimed in the patent at issue." *Intercontinental Great Brands LLC v. Kellogg N. Am. Co.*, 869 F.3d 1336, 1343 (Fed. Cir. 2017). Petitioners did not provide any such rationale. At best, Petitioners rely on hindsight bias to argue that a combination of references still somehow renders obvious the Challenged Claims. But hindsight bias cannot be "the thread that stitches together prior art patches into something that is the claimed invention." *Metalcraft of Mayville, Inc. v. The Toro Co.*, 848 F.3d 1358, 1367 (Fed. Cir. 2017). Petitioners' obviousness grounds therefore fail as well.

Petitioners provide cursory and, at times, illogical, discussion of the asserted prior art references with respect to each element, often merely reproducing the language of a particular claim element and declaring that the element is met by the reference without reason or explanation. *See Netflix, Inc. v. DivX, LLC*, 84 F.4th 1371 (Fed. Cir. 2023) ("Ultimately, it is the petitioner's burden to present a clear argument."). Petitioners therefore did not meet their burden of explaining "with particularity" the "evidence that supports the grounds for the challenge to each claim." 35 U.S.C. § 312(a)(3); *see also Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016).

For at least these reasons and those set forth below, Petitioners failed 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 ’550 Patent

The ’550 Patent is directed to a “type of stick vacuum cleaner wherein a hand vacuum cleaner is removably mounted to a drive handle and provides motive power to draw dirty air into the surface cleaning head.” Ex1001, 1:18–22.

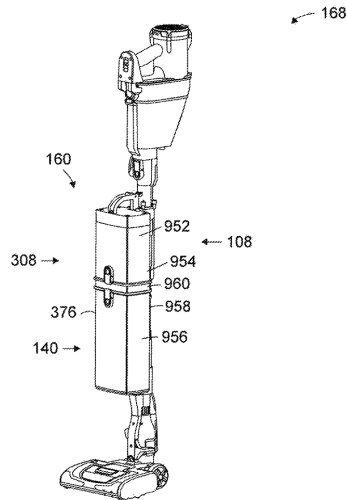


FIG. 82

Id., Fig. 82. The '550 Patent improves the prior art by providing an electrical connection between “an upstream attachment (e.g. a surface cleaning head)” and a “source of power.” *Id.*, 34:39–58. For example, in one embodiment, “one or more electrical cables 1132 . . . extend from electrical connector 1116 along vortex finder 1136 of cyclone chamber 184 toward motor housing 1138”—*i.e.*, through a “central portion” of the cyclone unit. *Id.* This configuration is illustrated below in an annotated version of Figure 96 of the '550 Patent.

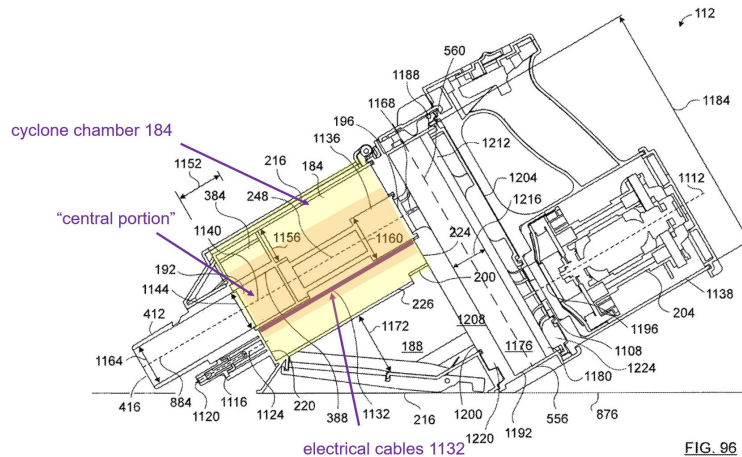


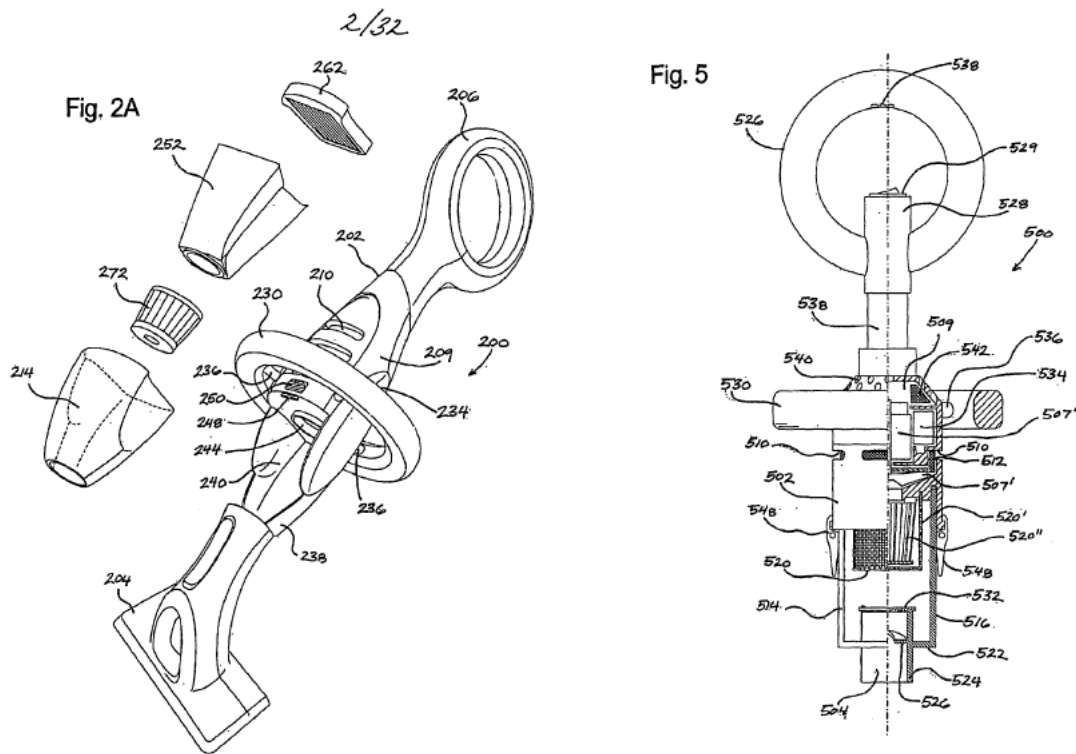
FIG. 96

Id., Fig. 96 (annotated).

B. Overview of Asserted References

1. Butler

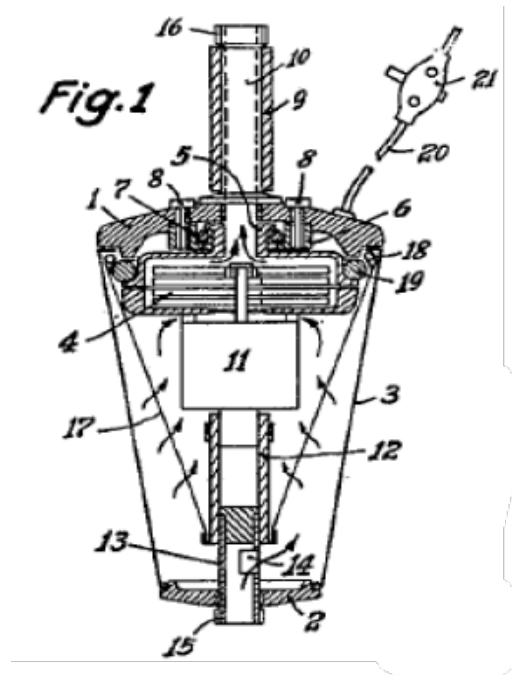
Butler is a 2007 PCT publication that details several distinct embodiments of a specialized “Stair Cleaning Vacuum.” Ex1005, Title. Butler discusses various existing solutions such as “upright and canister vacuum cleaners,” “stick vacuums,” and “compact hand-held vacuums,” and concludes that there “exists a need for an improved vacuum cleaner” specifically adapted for cleaning “raised” surfaces, and “particularly stair treads and risers.” *Id.*, 1:5–24, 3:10–16. Two distinct embodiments from Butler—one associated with Figure 2A and the other with Figure 5—are shown below.



Id., Figs. 2A, 5.

2. Peter

Peter is a 1939 Swiss patent for a vacuum cleaner having “suction nozzles and suction brushes that can be connected to the vacuum cleaner housing both directly and with the interposition of tubular and articulated parts so that they can be rotated, individually exchanged and combined with one another.” Ex1007, 1.



Id., Fig. 1.

3. Jansen

Jansen is a 2008 U.S. patent application publication for an upright “bare floor cleaner” for “wet and dry bare floor surfaces.” Ex1008, Abstract.

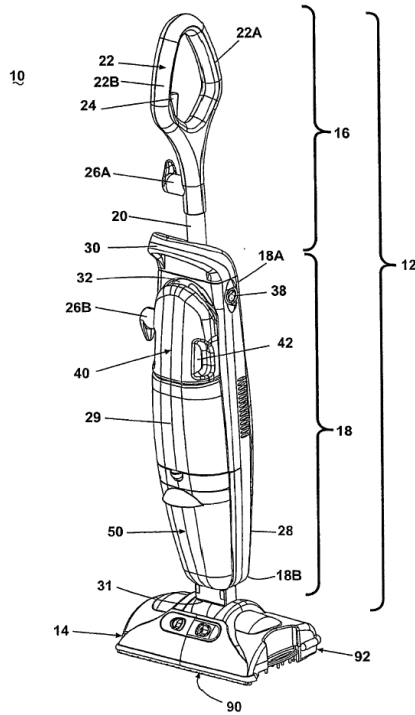
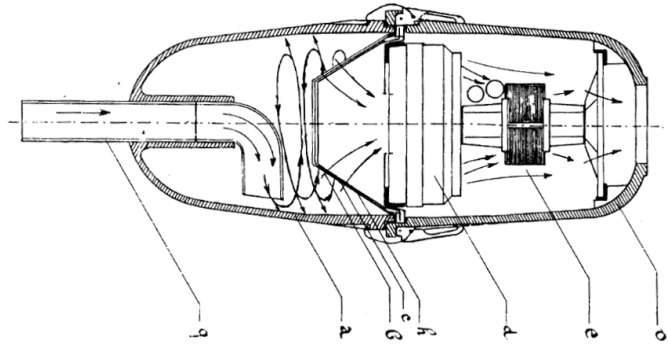


Fig. 1A

Id., Fig. 1A.

4. Martelliere

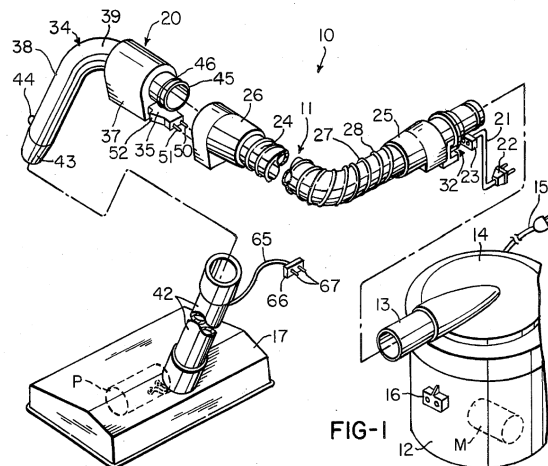
Martelliere is a 1955 French patent for an improvement to a “broom type vacuum cleaner model” that addresses the “recognized difficulty” of emptying dust bags by “replacing fabric [dust] bags” with a container made of “smooth and transparent material.” Ex1010, 1. This transparency allows a user to see how full the dust container is to “better judge when it must be emptied” and to “even see a lost object sucked up by the device and recover it.” *Id.*



Id., 2.

5. Neroni

Neroni is a 1984 U.S. patent for a “Vacuum Cleaning Tool Adapter with Electrical Control Means.” Ex1011, Title. Neroni describes a “cainster or tank type” of vacuum cleaner with a “hose assembly [that] is attached to the tank at one end” and attached to “a powered cleaning tool” at the other end. *Id.*, 1:6–17. Neroni describes a “female power receptacle 16 disposed on the outside surface of its tank 12” that is used to “supply electrical power through the hose assembly 11 into the adapter 20, and then to motor P of the power cleaning tool 17.” *Id.*, 3:34–49.



Id., Fig. 1.

V. SPECIFIC GROUNDS OF UNPATENTABILITY

A. Butler Does Not Anticipate Challenged Claims 1–28 (Ground 1)

1. **Butler does not disclose “an electrical connector provided on the front end of the cyclone unit” [1a.3]/[20a.3], “an electrical connector provided on the front end of the air treatment chamber” [12a.3], or “an electrical connector provided on the front end of the cyclone unit at a location adjacent the hand vacuum cleaner air inlet” [28a.3]**

All asserted claims require “an electrical connector provided on the front end” of the vacuum cleaner (*e.g.*, on the front end of the cyclone unit or the air treatment chamber). Petitioners failed to meet their burden of showing that Butler discloses these elements.

In particular, the Petition failed to identify any disclosure in Butler that teaches that an electrical connector is provided at the front end of the cyclone unit or the air treatment chamber, as recited. Petitioners cite Butler’s disclosure that “if a powered attachment is provided, suitable power leads can be provided to connect the powered attachment to the electric circuit.” Pet., 21 (citing Ex1005, 22:10–11). But this disclosure does not teach an *electrical connector provided on the front end*. Although power leads may include an electrical connector, power leads themselves are cables or wires. Indeed, in the Petition, Petitioners refer to Butler’s “power leads” as “electrical cables.” Pet., 23. Thus, a disclosure of “power leads,” without more, does not teach an electrical connector provided on the front end. Furthermore, even if one were to assume that the power leads of Butler necessarily included an

electrical connector, Butler is silent as to where this “electrical connector” would be located with respect to the “dirt receptacle body” of Butler.

Citing a conclusory expert declaration (rather than Butler itself), Petitioners assert that “Butler’s ‘entry tube’ includes an electrical connector provided on the front end of the cyclone separator to connect to ‘power leads’ and power Butler’s powered attachment.” Pet., 22. No text or figures in Butler support this naked assertion. As discussed above, Butler discloses nothing about an electrical connector for the “powered attachments,” much less anything about this connector being included in the “entry tube” (or anywhere else on the front end of Butler’s dirt receptacle body).

2. **Butler does not disclose “electrical cables extend rearwardly from the electrical connector through a central portion of the air treatment member toward the suction motor and fan assembly” [1a.3]/[12a.3]/[28a.3] or “electrical cables extend rearwardly from the electrical connector through the cyclone unit adjacent the hand vacuum cleaner inlet passage towards the suction motor and fan assembly” [20e]**

As explained above, Butler’s disclosure with respect to providing electrical power to attachments is extremely thin and limited to two sentences: “[I]f a powered attachment is provided, suitable power leads can be provided to connect the powered attachment to the electric circuit. These leads may pass around or through the dirt receptacle, or may be integrated into the dirt receptacle body.” Ex1005, 22:10–13. This scant disclosure relied on by Petitioners fails to teach the novel configuration

of electrical cables required by the Challenged Claims. Notably, Butler does not disclose the claimed origin of the electrical cables (from the “electrical connector”); it does not disclose the claimed direction of the cables’ extension (“rearwardly . . . toward the suction motor and fan assembly”); and it does not disclose in any way *how* or *where* the cables pass through Butler’s dirt receptacle (such as “through a central portion of the air treatment member” for claims 1, 12, and 28 or “through the cyclone unit adjacent the hand vacuum cleaner inlet passage” for claim 20).

Petitioners assert that “Butler teaches the electrical cables extend rearwardly from the electrical connector through a central portion of the cyclone unit toward the suction motor and fan assembly,” Pet., 22–24, but they cite no support from Butler (rather, they parrot a conclusory declaration). Petitioners annotate Figure 5 of Butler in an attempt to demonstrate the claimed “electrical cables,” *see* Pet., 22, but nothing in Butler’s Figure 5 or accompanying text identifies the power leads or any electrical cable. Petitioners’ own artistic additions and renderings are not Butler’s disclosure.

Petitioners argue that because the power leads of Butler “may pass . . . through the dirt receptacle” of Butler, they must “extend rearwardly through a central portion of the cyclone separator toward the fan/motor assembly.” Pet., 23. This is incorrect. While Petitioners contend in Section VII of the Petition that no claim terms require construction, for these limitations Petitioners posit a broad construction of “a central portion.” *See* Pet., 23–24 & n.8. But even a broad construction of “a central portion”

does not save Butler, because Butler discloses *nothing* about *how* or *where* the cables may pass through the dirt receptacle. For example, Butler's disclosure that "leads may pass . . . through the dirt receptacle" could mean that the leads only pass through a corner, which is not "through a central portion" under any reasonable construction. Thus, whether the "central portion" refers to the center from left-to-right, radially central, or some other center, Butler fails to disclose electrical cables extending "through" such portion.

Thus, Petitioners have not met their burden of showing that any of the Challenged Independent Claims are anticipated by Butler under Ground 1.

3. Butler does not anticipate Challenged Dependent Claims 2–11, 13–19, and 21–27

Because Butler fails to anticipate independent claims 1, 12, 20, and 28 of the '550 Patent, Butler necessarily fails to anticipate dependent claims 2–11, 13–19, and 21–27, which depend on independent claims 1, 12, and 20, respectively. As such, Petitioners have failed to demonstrate a reasonable likelihood of success on any claim in Ground 1.

B. Butler Does Not Render Obvious Challenged Claims 1–28 (Ground 2)

Tacitly acknowledging holes in its anticipation arguments based on Butler, Petitioners turn to the doctrine of obviousness to attempt to plug those holes. But Petitioners' arguments are driven by impermissible hindsight. *See KSR Int'l Co. v.*

Teleflex Inc., 550 U.S. 398, 421 (2007) (“A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon ex post reasoning.”). Petitioners provide conclusory statements about the modifications they propose being “obvious to try” and the alleged advantages or motivations to modifying Butler in such ways. Petitioners, however, use the claim language itself as a motivation to modify Butler—not any motivation from other references in the art or from the common sense of a POSITA, or even any other motivation consistent with KSR’s instruction to look to the “need or problem known in the field of endeavor at the time of invention and addressed by the patent.” *Id.* at 420.

To support its proposed rationales for modifying Butler, Petitioners cite the Declaration of Mr. Giachetti (Ex1002). However, these paragraphs also merely make conclusory statements about simple modifications that were allegedly obvious to try and alleged advantages without providing any explanation for such conclusory statements.

“[K]nowledge of a problem and motivation to solve it are entirely different from motivation to combine particular references” or to modify a particular reference in view of the knowledge of a POSITA. *Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1373 (Fed. Cir. 2008). Petitioners fall into the trap of, at best, identifying problems in Butler that require solving, but they come up short in

identifying a motivation to solve such problems in the ways required by the Challenged Claims.

1. **Butler does not render obvious “an electrical connector provided on the front end of the cyclone unit” [1a.3]/[20a.3], “an electrical connector provided on the front end of the air treatment chamber” [12a.3], or “an electrical connector provided on the front end of the cyclone unit at a location adjacent the hand vacuum cleaner air inlet” [28a.3]**

As discussed above, Butler not only fails to disclose any electrical connector for “powered attachments,” but it also provides no teachings regarding where the nondisclosed electrical connector may be located. Petitioners use the ’550 Patent and the Challenged Claims as a guide to cure these deficiencies. Petitioners cite to no objective evidence (other than a parroting a conclusory declaration) in support of their assertion that not only using a connector to power the tools would be obvious to a POSITA, but so too would placing the connector exactly where the claims require the connector to be. *See* Pet., 64–65 (citing only one paragraph of Butler and one paragraph of an expert declaration to support the conclusion that a POSITA “would’ve been motivated to place an electrical connector on Butler’s entry tube, at a location on the front end of the cyclone separator provided at a location adjacent the handvac air inlet, and aligned with and connected to a rigid airflow conduit electrical connector when the handvac is mounted to the rigid airflow conduit, which would have a corresponding rigid airflow conduit electrical connector”).

For this Ground, Petitioners do not cite a single reference (either as part of a combination with Butler or as a background reference) showing an electrical connector on the front end of the cyclone unit or air treatment chamber. Petitioners assume that the claimed solution of the '550 Patent would be the only way to position an electrical connector in Butler, but this argument ignores feasible alternatives to a connector on the front wall, such as running an electrical cable to a top wall, bottom wall, or sidewall. It is established law that “where the prior art gave either no indication of which parameters were critical or no direction as to which of many possible choices is likely to be successful,” it is erroneous to equate “obvious to try” with obviousness—which is exactly what Petitioners did here. *In re Kubin*, 531 F.3d 1351, 1359 (Fed. Cir. 2009) (citing *In re O'Farrell*, 853 F.2d 894, 903 (Fed. Cir. 1988)). Because Butler does not identify any details regarding wiring or connecting powered attachments, and Petitioners do not cite to any such details known in the art, Petitioners resort to improperly filling in these holes in Butler with improper hindsight.

2. **Butler does render obvious “electrical cables extend rearwardly from the electrical connector through a central portion of the air treatment member toward the suction motor and fan assembly” [1a.3]/[12a.3]/[28a.3] or “electrical cables extend rearwardly from the electrical connector through the cyclone unit adjacent the hand vacuum cleaner inlet passage towards the suction motor and fan assembly” [20e]**

As explained above, Butler does not disclose the novel configuration of electrical cables required by the Challenged Claims. Petitioners again rely on hindsight as a guide to allegedly fix these deficiencies in Butler. Petitioners thus failed to show that Butler renders these limitations obvious.

Petitioners argue that there are exactly two solutions to implementing Butler's teaching of power leads extending "through the dirt receptable" and each is obvious to try—one following the '550 Patent's teaching (extending through a central portion of the cyclone unit) and one not following the '550 Patent's teaching (not extending through a central portion of the cyclone unit). *See* Pet. 66. This argument turns the obviousness analysis on its head. By this logic all claimed limitations are obvious to try, because for any technical challenge, there are two solutions, namely, one following a challenged claim's teaching and one not following the challenged claim's teaching.

As discussed above, where the prior art gives no indication of which parameters were critical and no direction as to which of many possible choices is likely to be successful, it is erroneous to equate "obvious to try" with obviousness. *In re Kubin*, 531 F.3d at 1359. Butler does not identify any specific choices as to how to wire the "power leads" of Butler, other than stating at a high level that they "may pass around or through the dirt receptacle, or may be integrated into the dirt receptacle body." Ex1005, 22:10–13. Petitioners do not fill this gap in disclosure

with any teachings from the prior art—whether in references or within the knowledge of a POSITA. Contrary to Petitioners' arguments, there are numerous ways for wires to “pass . . . through” a receptacle, *e.g.*, cutting through a corner near the front wall, transversely cutting through a diameter, cutting through a corner near the rear wall, hugging a wall along the perimeter, etc. Petitioners failed to consider any of these options before concluding it would be obvious for the power leads in Butler to pass through the central portion of the cyclone unit.

Exemplifying their desperation, Petitioners argue that it would have been obvious to have “the electrical cables extend through the cyclone’s entire radial center”—*i.e.*, for the cables to be exposed and in the airflow of the cyclone—because this is “where there is the least airflow” and it is “the shortest distance through the cyclone unit.” Pet., 67. But neither Petitioners nor their expert provide *any* examples of vacuum cleaners with unprotected and unsupported electrical cables running down the center of a cyclone, where sharp debris could damage and even cut the cables. Moreover, in that placement in Butler, hair, carpet fibers and other stringy debris would wrap around the cable. To remove it, a user would have to cut or pull it away from the electrical cable, leading to a risk of damaging or removing the electrical cable entirely. Petitioners' unsupported and conclusory arguments on obviousness should be rejected.

Thus, Petitioners have not met their burden of showing that any of the Challenged Independent Claims are rendered obvious by Butler under Ground 2.

3. Butler does not render obvious Challenged Dependent Claims 2–11, 13–19, and 21–27

Because Butler fails to render obvious independent claims 1, 12, 20, and 28 of the '550 Patent, Butler necessarily fails to render obvious dependent claims 2–11, 13–19, and 21–27, which depend on independent claims 1, 12, and 20, respectively. As such, Petitioners have failed to demonstrate a reasonable likelihood of success on any claim in Ground 2.

C. Peter in View of Neroni Does Not Render Obvious Challenged Claims 1–28 (Ground 3)

1. Petitioners have not shown that a POSITA would have been motivated to combine Peter and Neroni

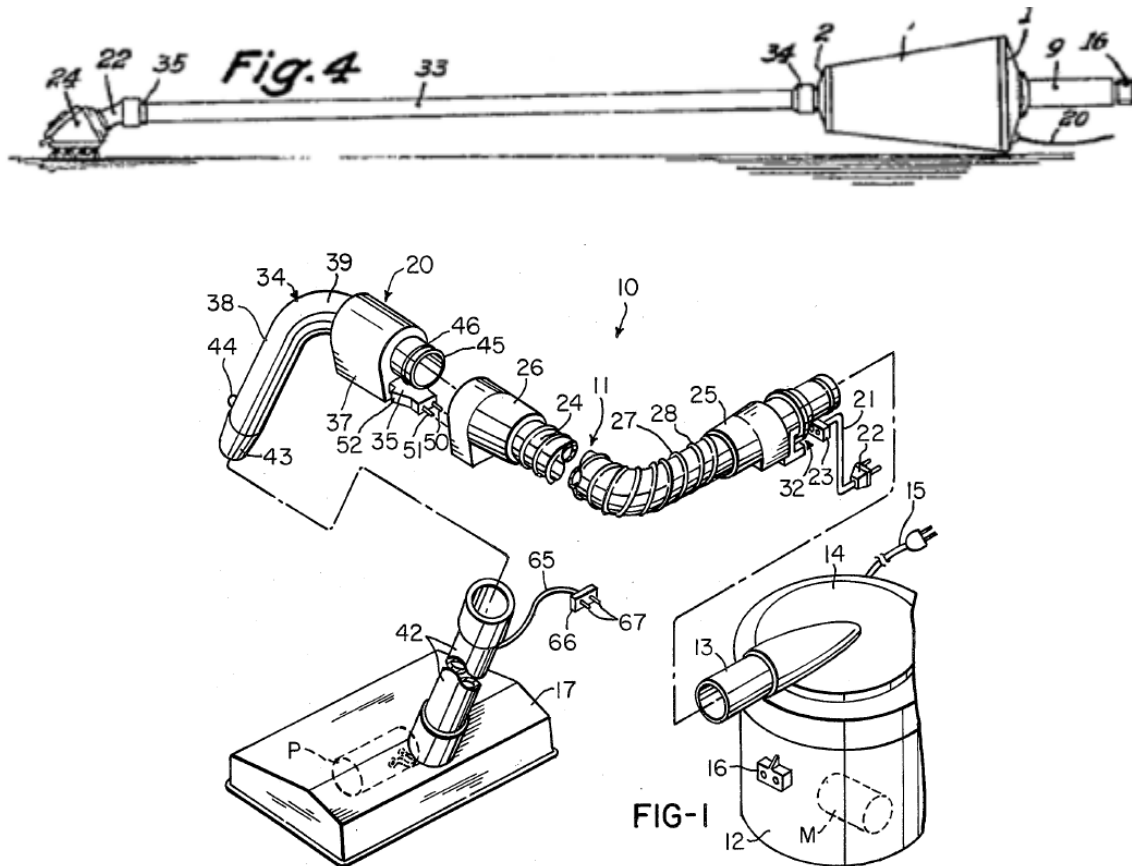
Petitioners provide conclusory statements about simple substitution and alleged advantages of modifying Peter based on Neroni's disclosure without providing any explanation for such conclusory statements. For example, Petitioners claim that "[a] POSA would've been motivated to use a powered cleaning tool with Peter (either by modifying Peter's suction 'accessory' ('suction piece' and 'pipe angle'), or by using a separate powered cleaning tool) and to incorporate Neroni's teachings of a power cleaning tool adaptor," and that "[a] POSA would've understood that powered cleaning tools can improve cleaning." Pet., 71–72. Petitioners additionally assert that a "POSA would've understood the well-known

benefits of a powered floor tool and would've been motivated to incorporate Neroni's electrical system into Peter to achieve these benefits." Pet., 72. The Board need not give any weight to Petitioners' conclusory arguments on motivations to combine Peter and Neroni.

Even if Petitioners' rationales to combine Peter and Neroni are substantively considered, Petitioners did not meet their burden of showing a motivation to combine the references. To the contrary, as explained below, there are several reasons—ignored by Petitioners—that a POSITA would not have been motivated to combine the teachings of Peter and Neroni. A petitioner must show "whether there was an apparent reason to combine the known elements in the fashion claimed by the patents at issue." *KSR Int'l*, 550 U.S. at 420 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Petitioners failed to do so here.

Peter and Neroni are directed to different types of vacuum cleaners, each solving different problems with their respective vacuum cleaners. As explained by Petitioners, Peter (below, top) is directed to "a hand/stick vacuum cleaner from 1939." Pet., 68 (citing Ex1007, Fig. 4). Peter seeks to improve such vacuum cleaners by providing interchangeable parts (such as "suction nozzles and suction brushes") that can be "rotated, individually exchanged and combined with one another." Ex1007, 1. Neroni (below, bottom), by contrast, is directed to a "canister or tank type" vacuum with a flexible hose. Ex1011, 1:7–9. Neroni solves the

problem of using the power unit for the canister vacuum to provide power to cleaning tools at the end of the flexible hose. *Id.*, 1:52–59.



Ex1007, Fig. 4; Ex1011, Fig. 1.

Each of Petitioners' alleged rationales for combining Peter and Neroni are merely conclusory statements with no explanation for why the combination is a simple substitution, why the advantages of the electrical connector on the tank of a canister vacuum as taught by Neroni apply to the stick vacuum of Peter, or why the substitutions would improve the vacuum of Peter.

To support these alleged rationales for combining the electrical connector on the tank of a canister vacuum as taught by Neroni with Peter's stick vacuum,

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. For example, neither Petitioners nor Mr. Giachetti address why a POSITA, reading Peter—which makes no mention of electric tools—would have been motivated to implement an entirely additional feature that allows electrical power to be provided to an electrical tool as taught by Neroni.

Thus, Petitioners have not met their burden of showing that the Challenged Claims were obvious in view of Peter in combination with Neroni under Ground 3.

2. The Peter and Neroni combination does not render obvious limitations [1a.3], [12a.3], [20a.3, 20e], or [28a.3] regarding the “electrical connector” and “electrical cables”

As explained above, all Challenged Claims require (1) an electrical connector provided at the front end of the cyclone unit or air treatment member, and (2) that electrical cables extend rearwardly from the connector through a central portion of the cyclone unit or air treatment member (for claims 1, 12, and 28) or through the cyclone unit adjacent the hand vacuum cleaner inlet passage (for claim 20). Petitioners failed to show that the combination of Peter and Neroni renders obvious these limitations.

Neroni discloses a “female power receptacle 16” on the outer surface of the canister, which supplies power to the cleaning tool through the flexible hose

assembly. Ex1011, 3:34–49. The hose assembly has a power cord with a male fitting that plugs into female power receptacle 16. *Id.* The canister also has a cord assembly 15 to plug into a suitable power source (*e.g.*, a wall). *Id.*, 3:25–29. Figure 4 is a wiring diagram, which shows that power receptacle 16 is connected to the motor, but this does not disclose how the electrical cables themselves are configured. *Id.*, Fig. 4. Notably, Neroni *does not* say (or even suggest) that an electrical cable runs from power receptacle 16 “through a central portion of the cyclone unit” to the motor. If anything, Neroni would be designed so any power cable run around (not “through”) the air separation in Neroni to get to the motor.

Petitioners argue that it would have been “obvious to try” running an electrical cord through the center of Neroni’s tank (*i.e.*, through the air separation unit) to the motor. Pet., 86. This is impermissible hindsight bias, at best. Just because this is the most “direct” or shortest route between the power receptacle and the motor does not mean a POSITA would have tried it. Neither Petitioners’ nor their expert provide *any* examples of vacuum cleaners with electrical cables running through the middle of an air separation unit in a canister vacuum, where sharp debris could damage and even cut the cables. To the contrary, as explained above, the only logical solution would be to run electrical cables around and not “through” a central portion of the air separation.

Furthermore, even if Neroni taught or suggested an electrical cable through the middle of the air treatment member in a canister vacuum (it does not), Petitioners are further deficient on explaining why a POSITA would have been motivated to apply that teaching to Peter's stick vacuum. Petitioners make only conclusory statements that a "POSA would've been motivated to implement Neroni's 'power receptacle 16' on the front end of Peter's cyclone unit." Pet., 83. Petitioners' hindsight-driven argument here uses the claim language as a map. *KSR*, 550 U.S. at 421. Peter does not make mention at all of using powered tools, and yet Petitioners provide conclusory statements about how a POSITA would have been motivated to implement Neroni's power receptacle in Peter. Petitioners do not explain how or why a POSITA would be motivated to implement a powered tool solution within Peter's system based on Peter's disclosure.

Thus, Petitioners have not met their burden of showing that any of the Challenged Independent Claims are rendered obvious by Peter and Neroni combination under Ground 3.

3. The Peter and Neroni combination does not render obvious Challenged Dependent Claims 2–11, 13–19, and 21–27

Because Peter in view of Neroni fails to disclose independent claims 1, 12, 20, and 28 of the '550 Patent, the Peter and Neroni combination necessarily fails to disclose dependent claims 2–11, 13–19, and 21–27, which depend on independent

claims 1, 12, and 20, respectively. As such, Petitioners have failed to demonstrate a reasonable likelihood of success on any claim in Ground 3.

D. The Peter, Neroni, Martelliere, and/or Jansen Combination Does Not Render Obvious Challenged Claims 1–28 (Ground 4)

1. Petitioners do not address each element of the Challenged Claims 1–28

Ground 4 only addresses elements [1a.1]/[28a.1], [1a.2]/[12a.2]/[20a.2]/[28a.2], and [9]. Pet., 112–19. Nowhere does Ground 4 purport to address or cite to any discussion of the remaining elements of the Challenged Claims 1–28, including by reference to earlier portions of its Petition. *See id.* Petitioners' citation to the cursory discussion in Mr. Giachetti's declaration of the alleged motivations to combine Peter, Neroni, Martelliere, and/or Jansen and of elements [1a.1]/[28a.1], [1a.2]/[12a.2]/[20a.2]/[28a.2], and [9] fails to cure this fatal deficiency. This is critical with respect to an obviousness theory because it is not clear to Patent Owner which references Petitioners rely on for each limitation.

Furthermore, nothing in the proposed combination of Peter, Neroni, Martelliere, and/or Jansen cures the issues described above with respect to the “electrical connector” and “electrical cables.” Thus, for the same reasons as explained with respect to Ground 3, Ground 4 fails.

Thus, Petitioners have not shown that the Peter, Neroni, Martelliere, and/or Jansen combination renders the Challenged Claims obvious.

2. Petitioners have not shown that a POSITA would have been motivated to combine Peter, Neroni, Martelliere, and/or Jansen

Petitioners provide conclusory statements about simple substitution and alleged advantages of modifying Peter without providing any explanation for such conclusory statements. Petitioners failed to address how Neroni would be implemented within the combination or to reference or cite to any discussion of Neroni at all. For example, Petitioners simply claim that “[a] POSA would’ve been motivated to employ cyclonic filtration with Peter using Martelliere’s teachings of a tangential pipe” and “[a] POSA would’ve been motivated to modify Peter’s handle having a hand grip portion, Peter’s ‘exhaust nozzle’ having a ‘rubber grip,’ to have a ‘bi-directional,’ ‘bilaterally symmetrical’ shape as Jansen teaches.” Pet., 113–18. Each of Petitioners’ alleged rationales are merely conclusory statements with no explanation for why the combination is a simple substitution, why the advantages of cyclonic separation as taught by Martelliere or a bilaterally symmetrical handle as taught by Jansen would apply to the vacuum of Peter, or why the substitutions would improve the vacuum of Peter.

To support these alleged rationales, 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.

As such, Petitioners have failed to demonstrate a reasonable likelihood of success on any claim in Ground 4.

VI. CONCLUSION

For the foregoing reasons, Petitioners have not met 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: June 21, 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 5,189, according to the word count tool in Microsoft Word.

DATED: June 21, 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 and supporting materials upon Petitioners by email on June 21, 2024, to the following email addresses of record:

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