

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SHARKNINJA OPERATING LLC,
SHARKNINJA MANAGEMENT LLC, AND
SHARKNINJA SALES COMPANY,
Petitioner,

v.

BISSELL INC.,
Patent Owner.

IPR2022-01195
Patent 11,147,426 B2

Before BENJAMIN D. M. WOOD, NEIL T. POWELL, and
CARL M. DEFRANCO, *Administrative Patent Judges*.

POWELL, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

A. Background and Summary

SharkNinja Operating LLC, SharkNinja Management LLC, and SharkNinja Sales Company (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 1–21 (“the challenged claims”) of U.S. Patent 11,147,426 B2 (Ex. 1001, “the ’426 patent”). BISSELL, Inc. (“Patent Owner”) filed a Preliminary Response (Paper 6, “Prelim. Resp.”). In its Preliminary Response, Patent Owner indicated it had filed a statutory disclaimer of claims 1, 7, 9–19, and 21 (Prelim. Resp. 9–10; Ex. 2001); the disclaimed claims are no longer part of the proceeding (*see* 37 C.F.R. § 42.107(e)). Pursuant to 35 U.S.C. § 314, an *inter partes* review of claims 2–6, 8, and 20 of the ’426 patent was instituted on all presented challenges. Paper 7 (“Institution Decision” or “Inst. Dec.”). Subsequently, Patent Owner filed a Response (Paper 11, “PO Resp.”), to which Petitioner filed a Reply (Paper 17, “Pet. Reply”), and Patent Owner thereafter filed a Sur-reply (Paper 18, “PO Sur-reply”).

A consolidated oral hearing for this proceeding and IPR2022-01194 was held on October 31, 2023. Paper 27 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This Decision is a final written decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons below, we determine that Petitioner has shown by a preponderance of the evidence that claims 2–6, 8, and 20 of the ’426 patent are unpatentable.

B. Real Parties-in-Interest

Petitioner asserts that “real parties-in-interest are Petitioners SharkNinja Operating LLC, SharkNinja Management LLC, and SharkNinja

Sales Company . . . , as well as EP Midco LLC and SharkNinja (Hong Kong) Company Limited.” Pet. vii. Petitioner also identifies “JS Global Lifestyle Company Limited as a real party-in-interest in an abundance of caution.” *Id.*

Patent Owner asserts that BISSELL Inc. is the real party in interest, but also identifies BISSELL Homecare, Inc. in “an abundance of caution.” Paper 3 (Patent Owner’s Mandatory Notices).

C. Related Matters

The parties both assert that there are no other judicial or administrative matters that would affect, or be affected by, a decision in this proceeding. Pet. vii; Paper 3.

This case has subject matter overlap with IPR2022-01194, in which Petitioner challenges claims in Patent Owner’s similar patent, US 10,973,383 B1.

D. The ’426 Patent

The ’426 patent is directed to a battery-powered, wet vacuum cleaner. Ex. 1001, 3:41–43.

E. Illustrative Claims

Claim 1, reproduced below, has been statutorily disclaimed, but forms the independent claim for the claims challenged. Claims 2 and 8, which depend therefrom, are also reproduced. Claim 7, which has been statutorily disclaimed but from which claim 8 depends, is also reproduced.

1 [disclaimed]. A surface cleaning apparatus, comprising:

an upright body comprising a handle and a frame, the frame comprising a main support section supporting a selectively removable supply tank and a selectively removable recovery tank, the handle defining an upper distal end;

a base operably coupled with a lower end of the upright body, a suction nozzle provided with the base at a forward portion;

a recovery system comprising the suction nozzle, a suction source in fluid communication with the suction nozzle for generating a working air stream, and the selectively removable recovery tank;

a fluid delivery system comprising the selectively removable supply tank and a fluid distributor provided on the base;

an agitator selectively receivable within the base;

a first wiper configured to interface with a portion of the agitator;

a second wiper mounted to the base behind the agitator and adapted to at least selectively contact a surface as the base moves across the surface to be cleaned in an operational position; and

a rechargeable battery provided at a rearward portion of the upright body, the rechargeable battery configured to selectively supply power to the suction source.

2. The surface cleaning apparatus of claim 1 wherein the upright body further comprises a battery housing provided on a rear side of the frame and the rechargeable battery is provided within the battery housing.

7 [disclaimed]. The surface cleaning apparatus of claim 1 wherein the selectively removable recovery tank is located on a forward side of the main support section.

8. The surface cleaning apparatus of claim 7 wherein the rechargeable battery is located rearwardly of the selectively removable recovery tank.

F. Prior Art and Asserted Grounds

Petitioner asserts that the challenged claims would have been unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §¹	References/Basis
2–6, 8, 20 ²	103	Xia ³ , Conrad ⁴ , Kitsukawa ⁵
20	103	Xia, Conrad, Kitsukawa, Onda ⁶

Petitioner also relies on the testimony of Gareth Jones. Ex. 1003.

G. Overview of the Asserted Prior Art

We now provide brief summaries of the asserted references.

1. Xia

Xia discloses multi-surface wet vacuum cleaner 10, which appears in Figure 1. Ex. 1004 ¶ 38. Figure 1 is reproduced below.

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), revised 35 U.S.C. § 103, effective March 16, 2013. The applications from which the ’426 patent issued were filed after March 16, 2013, so we apply the AIA version of § 103.

² Petitioner initially challenged claims 1–21 in this ground, but Patent Owner disclaimed claims 1, 7, 9–19, and 21. Ex. 2001.

³ US PG Pub. No. 2017/0119225 A1, pub. May 4, 2017 (Ex. 1004).

⁴ US 11,229,342 B2, iss. Jan. 25, 2022, filed Dec. 22, 2017 (Ex. 1005).

⁵ JP Pub. No. 2016-137095 A, pub. Aug. 4, 2016 (Ex. 1006) (citations are made to the certified English translation appended thereto).

⁶ JP Pub. No. 2014-236898 A, pub. Dec. 18, 2014 (Ex. 1011) (citations are made to the certified English translation appended thereto).

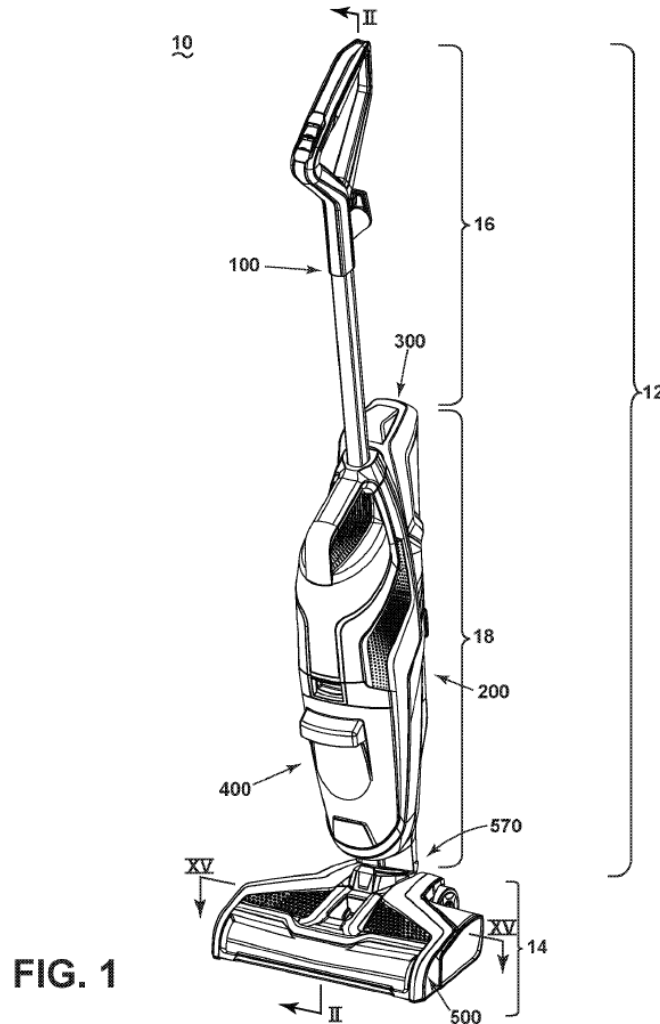


Figure 1 shows multi-surface wet vacuum cleaner 10 in perspective view.
Ex. 1004 ¶ 6.

Multi-surface wet vacuum cleaner 10 “includes an upright body or handle assembly 12 and a base 14 pivotally and/or swivel mounted to the upright handle assembly 12 and adapted for movement across a surface to be cleaned.” Ex. 1004 ¶ 38. “The upright handle assembly 12 comprises an upper handle 16 and a frame 18.” *Id.* ¶ 39. “Frame 18 comprises a main support section or body assembly 200 supporting at least a clean tank assembly 300 and a dirty tank assembly 400, and may further support additional components of the handle assembly 12.” *Id.*

2. Conrad

Conrad discloses a surface cleaning apparatus that may operate in a “dry cleaning mode” or a “wet cleaning mode.” Ex. 1005, 1:48–60. An example appears in Figure 9, which is reproduced below.

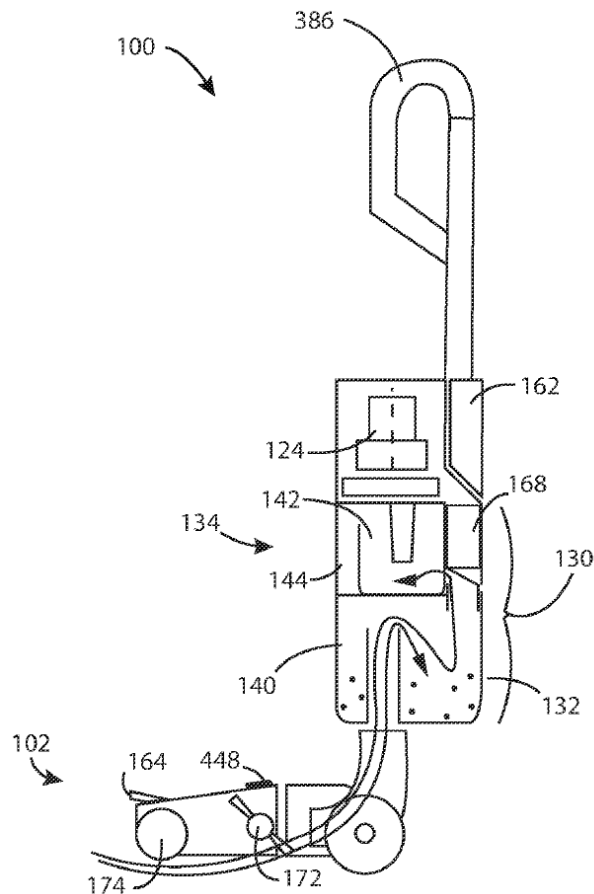


FIG. 9

Figure 9 shows surface cleaning apparatus 100. Ex. 1005, 101:38–43.

“[S]urface cleaning apparatus 100 includes a surface cleaning head 102 that is configured to travel (e.g., roll) across a surface to be cleaned, such as a floor.” Ex. 1005, 32:59–62. Surface cleaning apparatus 100 also includes suction motor 124. *Id.* at 34:51–52. Surface cleaning apparatus 100 further includes “a treatment unit 130 which is configured as a two stage treatment unit having a first stage separator 132 and a second stage separator 134 positioned in the fluid flow path

downstream from the first stage separator 132, and upstream from the suction motor 124.” *Id.* at 35:1–6. Notably, Conrad discloses providing cordless operation with battery pack 168:

the surface cleaning apparatus 100 may include an onboard power supply, such as in the form of a battery pack 168 and can be operated as a cordless apparatus (see for example [Figure] 9). The battery pack 168 may be relatively heavy as compared to some other components in the apparatus 100, and *may be positioned toward the rear of the cleaning unit 120. This may help lower the overall centre of gravity of the cleaning unit 120 when reclined in the surface cleaning position.* In the embodiment of [Figure] 9, the battery pack 168 is located below a liquid reservoir apparatus 162, rearward of the second cleaning state 134 (i.e. cyclone chamber 142) and above the first separator 132.

Ex. 1005, 101:38–51 (emphasis added).

3. *Kitsukawa*

Kitsukawa “relates to an electric vacuum cleaner.” Ex. 1006 ¶ 1. Kitsukawa discusses an embodiment in connection with Figure 7, which is reproduced below.

(FIG. 7)

FIG. 7

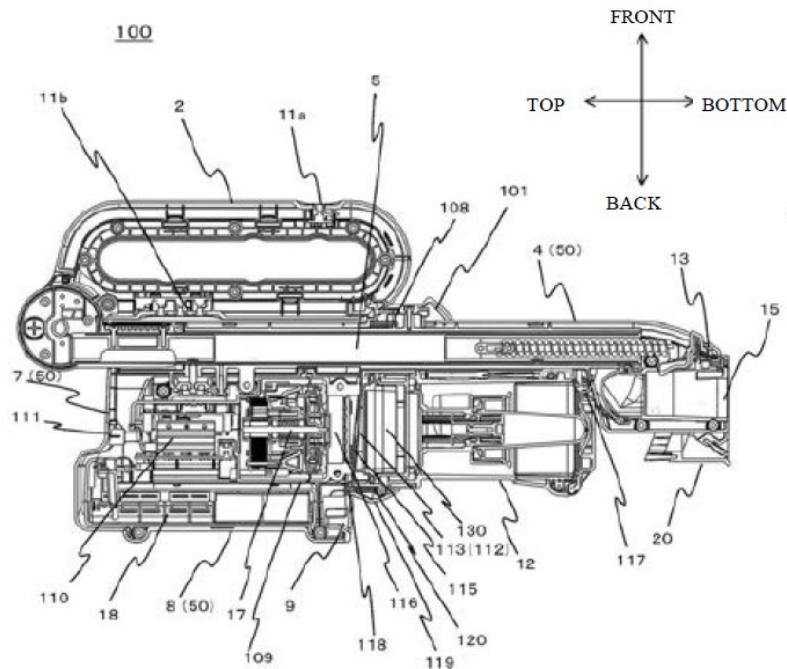


Figure 7 provides a cross-sectional view of a vacuum cleaner body.

Ex. 1006 ¶ 12.

As shown in Figure 7, the vacuum cleaner includes motor case part 7 and storage battery case 8. Ex. 1006 ¶ 38. “The electric blower 17 is disposed in the center of the motor case part 7.” *Id.* Kitsukawa discloses that “the storage battery case 8 is disposed on the back of the motor case part 7.” *Id.* Kitsukawa further explains that “by providing the body terminal part 9 for charging the storage battery 18 beneath the storage battery case 8 and making it engage with the charging station terminal part 28 of the charging station 6 . . . so that they are electrically conductive with one another, the storage battery 18 can be charged.” *Id.*

Kitsukawa shows charging station 6 in Figure 4, which is reproduced below.

(FIG. 4)

FIG. 4

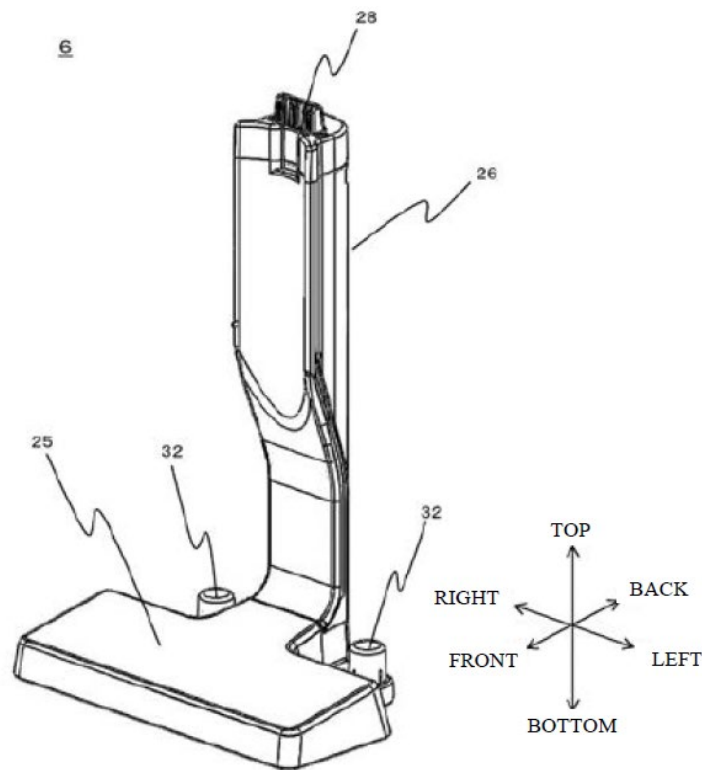


Figure 4 provides an external perspective view of charging station 6.

Ex. 1006 ¶ 12.

Charging station 6 includes base part 25 and stand part 26. Ex. 1006 ¶ 33. “The base part 25 is equipped with a power cord on the back, and has a charging board (not illustrated) on the inside.” *Id.* ¶ 34. “A protrusion-shaped charging station terminal part 28 is provided on the upper surface of the stand part 26 (upper surface of the substantially half-cylindrical portion of the stand part 26).” *Id.* ¶ 35. Additionally, “[t]he protrusion-shaped charging station terminal part 28 engages with a recess-shaped body terminal part 9 of the vacuum cleaner body 1.” *Id.* ¶ 37.

4. Onda

Onda “relates to a rechargeable electric vacuum cleaner.” Ex. 1011 ¶ 1. Specifically, Onda discloses a rechargeable vacuum cleaner with a

battery. *Id.* ¶ 7. Onda also discloses placing the vacuum cleaner on a charging pedestal. *Id.* Onda shows a charging pedestal in Figure 8, which is reproduced below. *Id.* ¶ 9.

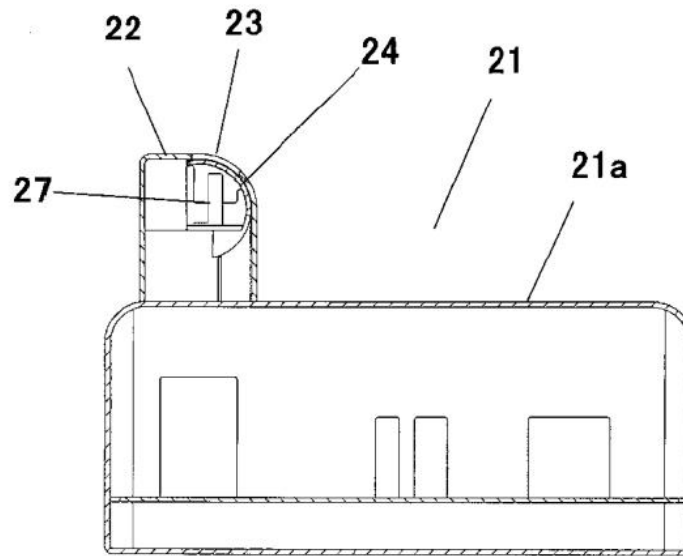
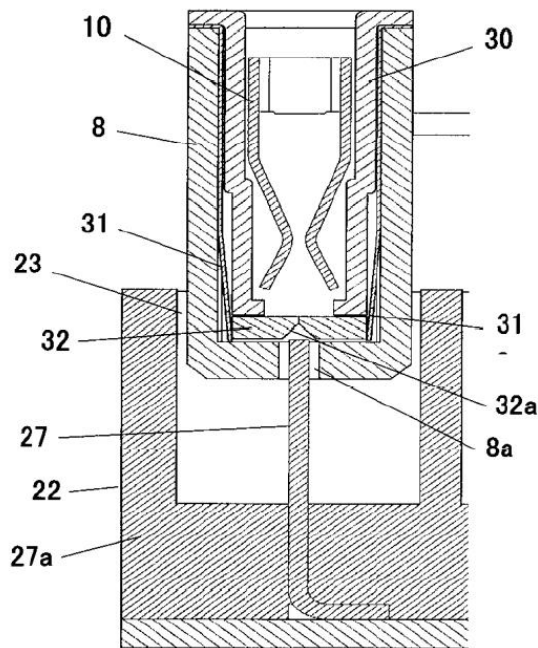


Figure 8 is a cross-sectional view of charging pedestal 21. Ex. 1011 ¶¶ 9, 18.

Charging pedestal 21 includes placement portion 21a, charging terminal housing portion 22, and charging terminal 27. Ex. 1011 ¶ 20. A vacuum cleaner main body can be put on placement portion 21a. *Id.* Charging terminal 27 is housed in charging terminal housing portion 22. *Id.* Additionally, “[t]he charging terminal housing portion 22 . . . forms a charging terminal opening portion 23 opposite the charging terminal 27 that causes the charging terminal 27 to face to the outside.” *Id.* The charging terminal housing portion also “has a shutter 24 that covers the inner side of the charging terminal opening portion 23 in an openable and closable manner.” *Id.*

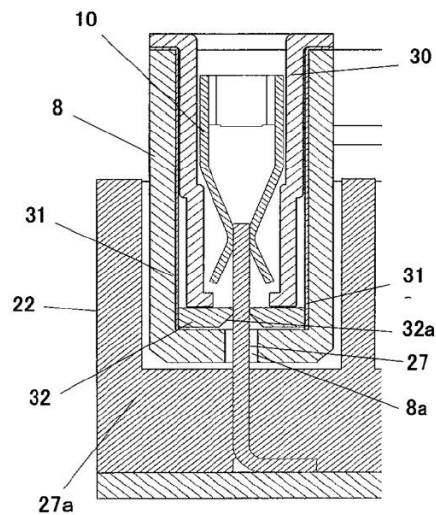
In connection with Figures 13 and 14, Onda discusses connection of a vacuum cleaner's charging terminal to charging pedestal 21's charging terminal 27. Ex. 1011 ¶27. Figure 13 is reproduced below.

(FIG. 13)



Onda explains that “[Figure] 13 is an enlarged cross-sectional view of the main body terminal housing portion 8 and charging terminal housing portion 22 in the state immediately prior to connection of the main body terminal 10 of the vacuum cleaner main body 1 to the charging pedestal.” Ex. 1011 ¶ 27. Onda shows a different state in Figure 14, which is reproduced below. *Id.*

(FIG. 14)



“[Figure] 14 is an enlarged cross-sectional view of the main body terminal housing portion 8 and charging terminal housing portion 22 in the state of connection of the main body terminal 10 of the vacuum cleaner main body 1 to the charging terminal 27 of the charging pedestal 21.” Ex. 1011 ¶ 27.

II. ANALYSIS

A. Legal Standards Used in the Merits Analysis

“In an IPR, the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review).

A claim is unpatentable under 35 U.S.C. § 103 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 . . . to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) when in evidence, objective evidence of nonobviousness, i.e., secondary considerations. *See Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966).

B. Level of Ordinary Skill in the Art

Petitioner asserts the following level of ordinary skill in the art:

a Bachelor’s degree in Mechanical Engineering (or an equivalent discipline) or equivalent work experience, and at least one year’s worth of experience in research, design and/or development related to vacuum cleaners for household and development [sic] related to vacuum cleaners (or other comparable industrial design). Additional education could substitute for experience, and vice versa.

Pet. 10 (citing Ex. 1003 ¶21).

In its Preliminary Response, Patent Owner asserted the following level of ordinary skill in the art: “a bachelor’s degree in mechanical engineering or similar discipline and at least one year of experience designing vacuum cleaners (or comparable industrial design). Additional education could substitute for experience, and vice versa.” Prelim. Resp. 9. Patent Owner did not cite supporting evidence for this position.

The Institution Decision adopted Petitioner’s proposed definition of the level of skill in the art, explaining that “[t]he definitions offered by the parties appear, for practical purposes, to be compatible. We adopt Petitioner’s proposed definition at this stage of the proceeding because it

cites, and is supported by, evidence and appears reasonable upon reviewing the '426 patent and the cited prior art.” Inst. Dec. 7. In its Response, “Patent Owner applies the skill level adopted by the Board for the purposes of institution.” PO Resp. 9.

The analysis in this Decision also applies Petitioner’s proposed level of skill, which appears to be consistent with the '426 patent and the asserted prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the prior art, itself, can reflect appropriate level of ordinary skill in art).

C. Claim Construction

We apply the same claim construction standard used in district courts, namely that articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b) (2022). In applying that standard, claim terms generally are given their ordinary and customary meaning as would have been understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips*, 415 F.3d at 1312–13. “[O]nly those terms need be construed that are in controversy, and only 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).

Here, one claim-construction issue warrants discussion. That issue is the meaning of “rearwardly of the selectively removable recovery tank” in claim 8’s recitation that “the rechargeable battery is located rearwardly of the selectively removable recovery tank.” Patent Owner contends “rearwardly of the selectively removable recovery tank” means “behind substantially the entirety of the selectively removable recovery tank.” PO Resp. 9–12. This is the plain and ordinary meaning of the claim language, Patent Owner argues. *Id.* at 10.

According to Patent Owner, its “construction is supported by both intrinsic and available extrinsic evidence.” PO Resp. 10. Starting with intrinsic evidence, Patent Owner argues that the ’426 patent’s Figure 34 “depicts the battery housing 3374 behind substantially the entirety of the selectively removable recovery tank 3022.” *Id.* at 11. Patent Owner further contends that “the specification does not disclose embodiments in which a rearward position is anything less than behind substantially the entirety of the reference feature.” *Id.* Citing a dictionary, Patent Owner adds that “[a]vailable extrinsic evidence defines ‘rearward’ as ‘directed toward the back.’” *Id.* at 12.

Petitioner counters that Patent Owner rewrites the claim language without providing supporting evidence. Pet. Reply 2. Petitioner argues that Patent Owner’s proposed construction is not the plain and ordinary meaning of the claim language. *Id.* at 3. Petitioner asserts that the single embodiment in the ’426 patent’s Figure 34 “cannot provide a definition for what rearwardly means.” *Id.* Petitioner adds that Figure 34 “just shows that battery housing is rearwardly—to the rear of—the supply tank,” noting the ’426 patent’s statement that “specific dimensions and other physical characteristics relating to the embodiments disclosed herein are not to be considered as limiting, unless the claims expressly state otherwise.” *Id.* at 4. Petitioner further contends that Patent Owner’s dictionary definition does not support Patent Owner’s proposed claim construction:

Patent Owner relies on an extrinsic dictionary definition of rearward as being “directed toward the back.” POR at 12 (citing Ex. 2002 at 3). But being directed toward the back provides no support for Patent Owner’s improper narrowing down to “behind substantially the entirety of”; instead, it supports Petitioner’s position that rearwardly just means at or near the rear. *See* Ex. 2002 at 3 (defining “rearward” as “directed toward the back”);

Ex. 1003, ¶¶ 168–71 (interpreting “rearwardly” to mean located at or near the rear). Nothing in the wording of “directed toward the back” suggests an indication of an amount that would then translate into “substantially the entirety of.”

Pet. Reply 5.

Patent Owner responds that Petitioner does not support its positions with persuasive evidence and fails to explain how the dictionary definition of “rearward” would support Petitioner’s position, as opposed to Patent Owner’s position. PO Sur-reply 1–3. According to Patent Owner “the phrase ‘directed toward’ logically implies a degree of approximation, which is manifested in Patent Owner’s construction as being ‘behind substantially the entirety of the selectively removable recovery tank.’” *Id.* at 3.

We agree with Petitioner that Patent Owner’s arguments and evidence do not support a conclusion that the claim language “rearwardly of the selectively removable recovery tank” means “behind substantially the entirety of the selectively removable recovery tank.” PO Resp. 9–12; Pet. Reply 2–6; PO Sur-reply 1–3. We start with the claim language itself. *See Phillips*, 415 F.3d at 1314. Patent Owner does not cite persuasive evidence for its assertion that the proposed construction captures the claim language’s ordinary and customary meaning. *See* PO Resp. 10. To the contrary, as Petitioner argues, Patent Owner undermines its position by citing the dictionary definition of “rearward” as meaning “directed toward the back.” PO Resp. 12; Pet. Reply 5. This definition suggests that the plain meaning of the claim language “rearwardly of the selectively removable recovery tank” is significantly broader than Patent Owner’s proposed construction.

Contrary to Patent Owner’s view, the cited portions of the Specification and drawings also fail to support Patent Owner’s proposed claim construction. *See* PO Resp. 11. Assuming Patent Owner is correct

that Figure 34 shows an exemplary embodiment in which a battery is located “behind substantially the entirety of the selectively removable recovery tank,” we cannot arbitrarily limit the claim to that embodiment. *SuperGuide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004) (“Though understanding the claim language may be aided by the explanations contained in the written description, it is important not to import into a claim limitations that are not a part of the claim.”). And Patent Owner does not cite persuasive evidence of the Specification or drawings emphasizing or even ascribing significance to having a battery “behind substantially the entirety of the selectively removable recovery tank.” PO Resp. 9–12; PO Sur-reply 1–3.

For the foregoing reasons, we do not adopt Patent Owner’s proposed construction of claim 8’s recitation of “rearwardly of the selectively removable recovery tank.” Instead, we find more persuasive Petitioner’s proposed construction: “at or near the rear of the selectively removable recovery tank.” Pet. Reply 6.

*D. Asserted Obviousness over Xia, Conrad, and Kitsukawa
(Claims 2–6, 8, and 20)*

According to Petitioner, “[e]very claimed component in the ’426 patent other than the rear rechargeable battery is disclosed—using the **same** terminology with the **same** figures—by Patent Owner’s own prior art publication, Xia.” Pet. 1. Petitioner asserts that Xia and the ’426 patent have nearly identical disclosures “except for additional description of the battery in the ’426 patent.” *Id.* Petitioner elaborates that “Xia discloses a cordless vacuum that uses a battery, but it does not explicitly disclose [the challenged claims’ requirement] that the battery is rechargeable and located in the rear with charging contacts.” *Id.*

Petitioner contends that it was well known to place a rechargeable battery in a cordless cleaning device's rear part. Pet. 1. Petitioner elaborates that Conrad and Kitsukawa "both . . . disclose cordless cleaning devices" and "detail the precise location of the rechargeable battery claimed in the '426 patent to achieve a well-known benefit of lowering the center of gravity due to the battery's weight." *Id.* at 1–2. Petitioner asserts that "Conrad teaches that 'the battery pack 168 is located below a liquid reservoir apparatus 162,' and 'rearward of the second cleaning state.'" *Id.* at 18 (citing Ex. 1005, 101:48–51). Petitioner contends that a person of ordinary skill in the art would have been motivated to modify Xia's cleaner "to adopt Conrad's suggested battery positioning." *Id.* (citing Ex. 1003 ¶¶ 77–78). Petitioner argues that "Conrad explicitly teaches that its suggested positioning of the battery pack 'may help lower the overall center of gravity of the cleaning unit 120 when reclined in the surface cleaning position.'" *Id.* at 19 (citing Ex. 1005, 101:43–51).

Petitioner cites Kitsukawa to address the challenged claims' requirement that the battery be rechargeable. Pet. 40–42. Noting that Xia's and Conrad's disclosures of battery-powered vacuums do not explicitly mention rechargeable batteries, Petitioner argues that Kitsukawa teaches that its "vacuum cleaner 100 . . . is a rechargeable vacuum cleaner which charges the storage battery 18 by the charging stand 6.'" *Id.* at 19 (citing Ex. 1006 ¶ 17). According to Petitioner, "[a person of ordinary skill in the art] would have understood that the rechargeable battery taught by Kitsukawa would be useful in Xia's cleaner (as modified to use the battery positioning from Conrad) to achieve the same benefits, and they would have been motivated to that combination." *Id.* at 19–20 (citing Ex. 1003 ¶ 87).

Patent Owner counters that the challenged claims recite subject matter not taught by the cited prior art. PO Resp. 1. According to Patent Owner, Petitioner has not addressed sufficiently certain of the challenged claims' limitations:

(a) a battery housing provided on the rear side of the frame (claim 2); (b) a rechargeable battery located rearwardly of the selectively removable recovery tank (claim 8); and (c) a moveable tray cover operably coupled to the tray body and configured to move between a covered position in which the tray charging contact is covered and in an opened position in which the charging contact is accessible (claim 20).

Id. at 2.

Based on our review of all of the parties' arguments and evidence, we determine Petitioner has demonstrated by a preponderance of the evidence that each of claims 2–6, and 8 would have been obvious over the combined teachings of Xia, Conrad, and Kitsukawa. Regarding claim 20, for the reasons discussed below in Section II.E, Petitioner demonstrates obviousness of claim 20 over the combined teachings of Xia, Conrad, Kitsukawa, and Onda. Consequently, we need not reach Petitioner's assertion that claim 20 would have been obvious over Xia, Conrad, and Kitsukawa.

Patent Owner does not dispute Petitioner's arguments and evidence regarding certain of the challenged claims' limitations. With respect to those undisputed limitations, we have carefully reviewed Petitioner's arguments and evidence, and we find them persuasive.

Below, we discuss in detail the arguments and evidence relating to those claim limitations in dispute. For the reasons that follow, we find Petitioner's arguments and evidence more persuasive than Patent Owner's.

1. “battery housing provided on a rear side of the frame” (claim 2)

Independent claim 1 recites “an upright body comprising a . . . frame” with “a rechargeable battery provided at a rearward portion of the upright body.” Ex. 1001, 30:16, 30:38–39. Dependent claim 2 adds that “the upright body further comprises a battery housing provided on a rear side of the frame and the rechargeable battery is provided within the battery housing.” *Id.* at 30:41–44.

Addressing the claimed “upright body” and “frame,” Petitioner cites Xia’s disclosure that “[t]he upright handle assembly 12 comprises an upper handle 16 and a frame 18.” Pet. 22 (citing Ex. 1004 ¶ 39). Regarding the claimed “battery,” Petitioner cites Xia’s disclosure that “[a] power source 22, such as a battery or power cord plugged into a household outlet, can be electrically coupled to the electrical components of the vacuum cleaner 10, including the motors 205, 503 and pump 226.” *Id.* at 35–36 (citing Ex. 1004 ¶ 80).

Noting that “Xia does not explicitly recite . . . where the battery would be positioned on the cleaner,” Petitioner argues that Conrad discloses placing its battery pack 168 on the frame of the surface cleaner’s upright body, specifically at the upright body’s rearward portion. Pet. 36–38 (citing Ex. 1005, 101:38–41, 101:43–51, Fig. 9; Ex. 1003 ¶ 124). Petitioner argues that “[i]t would have been obvious to a [person of ordinary skill in the art] to dispose the battery power source 22 of Xia rearwardly of Xia’s recovery tank 401, according to the arrangement taught by Conrad, to help lower the overall center of gravity of Xia’s surface cleaning apparatus.” *Id.* at 38–39 (citing Ex. 1004, Fig. 2; Ex. 1003 ¶¶ 124–129). Petitioner asserts that “Xia and Conrad generally describe upright wet vacuum cleaners having similar structures, including supply and recovery tanks.” *Id.* at 39 (citing Ex. 1003

¶ 128). Petitioner adds that “Conrad explains that “[t]he battery pack 168 may be relatively heavy as compared to some other components in the apparatus 100, and may be positioned toward the rear of the cleaning unit 120”” and that Conrad discloses this “may help lower the overall centre of gravity of the cleaning unit 120 when reclined in the surface cleaning position.” *Id.* at 37 (quoting Ex. 1005, 101:43–48).

In its Response, Patent Owner argues that each of Xia, Conrad, and Kitsukawa fails to disclose a battery on a rear side of an upright body’s frame. PO Resp. 15–18. For example, Patent Owner argues that Conrad’s “battery pack 168 is positioned on a cyclone chamber 142, not the rear side of a frame.” *Id.* at 15. Patent Owner also argues that “Petitioner provides no explanation as to why it would have been obvious to have modified Xia to provide a battery pack 168 on Xia’s frame 18, as opposed to Xia’s base 14 for example, which would further lower the center of gravity, consistent with Conrad’s express teachings.” *Id.* (citing Ex. 1005, 101:45–48; Ex. 2003, 46:6–16, 46:25–16).

In its Reply, Petitioner argues that Patent Owner “misses the point” by “focus[ing] solely on Conrad’s disclosure,” whereas “[t]he Petition is relying on Conrad’s teaching and applying that teaching to Xia.” Pet. Reply 8. Petitioner explains that “[i]n the modified version of Xia [set forth in the Petition], the power source 22 is clearly provided on body assembly 200 of [Xia’s] frame 18.” *Id.* And Petitioner maintains that “[t]he Petition establishes why a POSITA would have been motivated to modify Xia to provide a battery housing on the frame of the upright body and provides modified [Figure] 2 of Xia to show what that arrangement would be.” *Id.* at 10.

Petitioner also asserts that “Patent Owner’s argument is based on an incorrect interpretation of Conrad’s Figure 9.” Pet. Reply 8. Petitioner contends that “[t]here is nothing in Conrad’s Figure 9 or the Conrad specification to support Patent Owner’s argument that the battery pack is ‘positioned on’ cyclone chamber 142 as opposed to just being next to it.” *Id.*

Regarding Patent Owner’s argument that placing the battery on the surface cleaning apparatus’s base would further lower the center of gravity, Petitioner asserts that “there is no requirement in the obviousness analysis that requires Petitioner to show that one obvious implementation (placement of the battery on the frame of the upright body) is preferable to a second obvious implementation (placement of the battery on the base).” Pet. Reply 9 (citing *Fleming v. Cirrus Design Corp.*, 28 F.4th 1214, 1223–24 (Fed. Cir. 2022)).

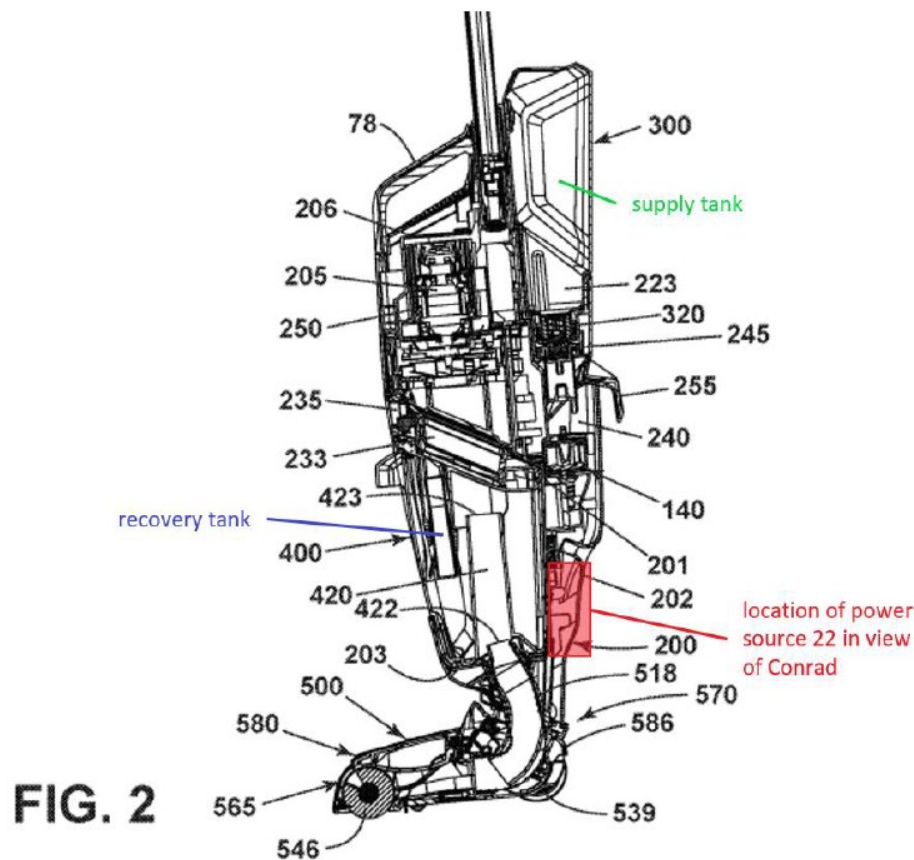
In its Sur-reply, Patent Owner disputes Petitioner’s characterizations of Xia and argues that “Petitioner’s Reply does not provide any apparent reason to modify Xia to provide a battery housing on Xia’s frame 18.” PO Sur-reply 3–4. According to Patent Owner, Petitioner explains why it would have been obvious to modify Xia to use a rechargeable battery inside a battery housing, but Petitioner does not provide a motivation for placing a battery on Xia’s frame 18. *Id.* at 5. Disputing Petitioner’s arguments about Conrad, Patent Owner asserts that “Conrad does not mention a frame, and indeed Figure 9 of Conrad depicts a battery pack on a cyclone chamber 142.” *Id.*

Weighing the parties’ arguments and evidence, Petitioner persuades us that a “battery housing provided on a rear side of the frame” would have been obvious in view of the prior art. Pet. 18–19, 22–23, 35–40, 43–44; PO Resp. 15–18; Pet. Reply 6–11; PO Sur-reply 3–6. As Petitioner notes, Xia

discloses mounting components, including clean tank assembly 300 and dirty tank assembly 400, to body assembly 200, which is part of the upright body's frame 18. Pet. 22–23; Pet. Reply 8; Ex. 1004 ¶¶ 39, 44–45, 53–54; Ex. 1003 ¶¶ 58, 95–96. Additionally, although we agree with Patent Owner that the text of Conrad does not expressly mention a “frame,” we find that a person of ordinary skill in the art would have understood Conrad's disclosure the way Mr. Jones does, specifically that “the battery pack 168 is provided on the frame of the upright body of Conrad's surface cleaning apparatus.” Ex. 1003 ¶ 137; *In re Fritch*, 972 F.2d 1260, 1264–65 (Fed. Cir. 1992) (a reference stands for all of the specific teachings thereof as well as the inferences one of ordinary skill in the art would have reasonably been expected to draw therefrom). As Petitioner notes, Xia demonstrates that prior-art surface cleaning apparatuses with the same conventional configuration as Conrad's had components of an upright body portion mounted to the upright body portion's frame. Pet. 18–19, 22–23; Ex. 1004 ¶¶ 34, 38–39, 44–45, 53–54, Fig. 1; Ex. 1005, 32:59–33:8; Ex. 1003 ¶¶ 83, 93–96. Logically, then, a person of ordinary skill in the art would have inferred that the components of Conrad's upright body portion, including battery pack 168, would be provided on a frame of the upright battery pack, consistent with Mr. Jones's testimony. Ex. 1003 ¶ 137.

Moreover, even if none of the references individually discloses a battery on a frame of a surface cleaning apparatus's upright body, Petitioner's arguments and evidence persuade us that such a configuration would have been obvious in view of the references, collectively. Mr. Jones testifies that it would have been obvious to place a battery in Xia's cleaner where Conrad expressly discloses one should place a battery on a surface cleaning apparatus, specifically “toward the rear of cleaning unit” below a

supply tank, as shown in Mr. Jones’s modified version of Xia’s Figure 2, reproduced below.



Mr. Jones’s modified version of Xia’s Figure 2 illustrates the location in which Mr. Jones testifies that Conrad teaches placing a battery like the one used in Xia’s surface cleaning apparatus. Ex. 1003 ¶ 127. So placed, the battery is on the frame of the surface cleaning apparatus’s upright body, as Patent Owner recognizes. Pet. Reply 7–8; Tr. 30:10–11. On the whole, Petitioner has demonstrated that it would have been obvious to place a battery “on a rear side of the frame” of Xia’s upright body. Pet. 18–19, 22–23, 35–40, 43–44; Pet. Reply 6–9.

Even if accurate, Patent Owner’s argument that neither reference expressly discloses locating the battery on the frame does not undermine Petitioner’s showing of obviousness. *E.g.*, PO Sur-reply 3–5. An

obviousness “analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim.” *KSR*, 550 U.S. at 418; *see also id.* at 421 (“A person of ordinary skill is also a person of ordinary creativity, not an automaton.”).

Similarly, even if accurate, Patent Owner’s suggestion that there may have been other obvious places to locate a battery in Xia’s cleaner does not undermine Petitioner’s showing of obviousness. *E.g.*, PO Resp. 15–16; *see also Fleming*, 28 F.4th at 1223–24 (Fed. Cir. 2022) (“[T]he Board correctly explained that the obviousness inquiry does not require that the prior art combination is ‘preferred, or the most desirable’ configuration.”).

2. “*wherein the rechargeable battery is located rearwardly of the selectively removable recovery tank*” (claim 8)

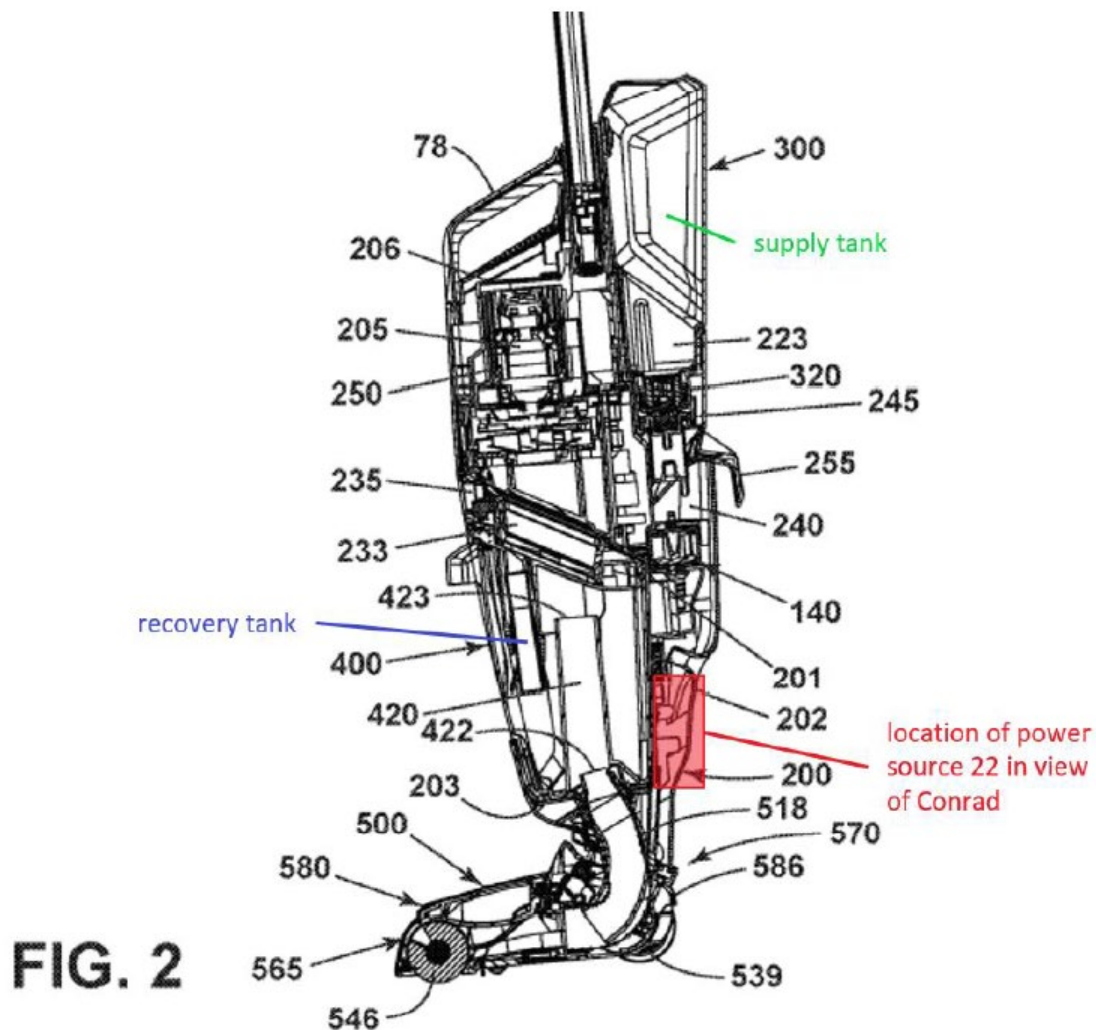
As discussed above in Section II.D.1, Petitioner notes that Xia discloses using a battery for its surface cleaning apparatus, but does not explicitly disclose the location of the battery on the surface cleaning apparatus. Pet. 35–36. Asserting that Conrad discloses certain advantages of placing a battery toward the rear of a surface cleaning apparatus, Petitioner contends that it would have been obvious to locate a battery in Xia’s surface cleaning apparatus rearwardly of Xia’s recovery tank 401. *Id.* at 14–16, 18–19, 36–40, 55–63; Pet. Reply 11–14.

Patent Owner argues that “the Petition fails to show that Xia, Conrad, and Kitsukawa discloses [a battery ‘located rearwardly of the selectively removable recovery tank,’],” “[a]s properly construed.” PO Resp. 20. Noting that Xia does not disclose the limitation and that Petitioner “cites Figure 9 of Conrad,” Patent Owner argues that “the battery pack 168 shown in Conrad’s Figure 9 is not *entirely* behind both cleaning stages of the treatment unit 130” but “is even with, and positioned above, the first stage

separator 132.” *Id.* at 21 (emphasis added). According to Patent Owner “[b]ecause the first stage separator 132 comprises an indispensable portion of the recovery tank in Conrad, which is below the battery 168, Conrad’s battery 168 is not disposed ‘behind *substantially the entirety* of the selectively removable recovery tank.’” *Id.* (emphasis added). Based on this alleged importance of first stage separator 132, Patent Owner adds that Conrad “fails to supply the required motivation to move the power source 22 of Xia in the manner claimed.” PO Sur-reply 7.

Weighing the parties’ arguments and evidence, Petitioner persuades us that it would have been obvious over the cited references to locate the battery in Xia’s cleaner “rearwardly of the selectively removable recovery tank,” as recited in claim 8. Pet. 11–16, 18–19, 36–40, 55–63; PO Resp. 9–12, 15–18; Pet. Reply 2–6, 11–13; PO Sur-reply 1–3, 6–8. As discussed above in Section II.C, Patent Owner’s arguments rest on its erroneous construction of the claim language “rearwardly of the selectively removable recovery tank” as meaning “behind substantially the *entirety* of the selectively removable recovery tank.” PO Resp. 9–12, 20–22 (emphasis added); PO Sur-reply 2–3, 6–8. As also explained above in Section II.C, Petitioner has the better construction of “rearwardly of the selectively removable recovery tank”: “at or near the rear of the selectively removable recovery tank.” Pet. Reply 2–6. Additionally, for the reasons explained below, Petitioner persuades us that, in view of the combined teachings of Xia, Conrad, and Kitsukawa, it would have been obvious to configure Xia’s surface cleaning apparatus in a manner that would have met either party’s proposed construction of the claim language “wherein the rechargeable battery is located rearwardly of the selectively removable recovery tank.”

As Petitioner notes, Conrad explains certain advantages of placing the battery “toward the rear of the cleaning unit,” including rearwardly of a chamber of the recovery tank. Ex. 1005, 101:43–51; Pet. 16, 18–19, 37–39, 55–58; Pet. Reply 12–13. Petitioner persuades us that, consistent with this disclosure, it would have been obvious to locate the battery in Xia’s cleaner in the position shown in Petitioner’s modified version of Xia’s Figure 2, reproduced below. Pet. 18–19, 36–40, 55–58; Pet. Reply 12–13.



Petitioner’s modified version of Xia’s Figure 2 illustrates the location in which Petitioner contends it would have been obvious to place the battery in Xia’s cleaner in view of Conrad’s teachings. *E.g.*, Pet. 38. Petitioner also

persuades us that in this position, the battery in Xia's cleaner would have been "located rearwardly of the selectively removable recovery tank."

Id. at 39–40, 55–58; Pet. Reply 11–14. Indeed, Petitioner persuades us that this positioning of the battery in Xia's cleaner would have been located entirely rearwardly of Xia's recovery tank. Pet. 39–40, 55–58; Pet. Reply 11–12.

Patent Owner does not persuasively counter Petitioner's contentions that it would have been obvious to place the battery in Xia's cleaner as shown above and that in this position the battery would have been "located rearwardly of the selectively removable recovery tank." Instead, Patent Owner's arguments focus on an embodiment of Conrad's recovery tank with a first separator that protrudes under Conrad's battery. PO Resp. 19–22; PO Sur-reply 6–8. These arguments fail to recognize that Petitioner's proposed combination of the prior art structures does not include Conrad's recovery tank. Instead, Petitioner's proposed combination combines Conrad's disclosure of placing the battery on the rear side of the upright body with Xia's recovery tank. As noted in the Institution Decision, Petitioner does not argue and need not show obviousness of the claim based on bodily incorporation of all of Conrad's teachings into Xia's cleaner. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981).

Additionally, Patent Owner's conclusory attorney argument about the importance of Conrad's first stage separator 132 to Conrad's cleaner does not persuasively rebut Petitioner's sound evidence that Conrad would have rendered it obvious to place a battery on Xia's cleaner in the location identified by Petitioner. PO Resp. 21; PO Sur-reply 7. Even if it is true that first stage separator 132 plays some important role in Conrad's cleaner, Patent Owner does not present persuasive evidence that first stage

separator 132 contributes in any way to the disclosed advantages of placing the battery on the rear of the cleaner. Nor does Patent Owner provide persuasive evidence that a person of ordinary skill in the art would have considered first stage separator 132 important or useful in Xia's cleaner.

Moreover, even if Petitioner's combination did bodily incorporate a recovery tank from Conrad into Xia's surface cleaning apparatus, Petitioner's arguments and evidence are more persuasive than Patent Owner's for at least two reasons. First, Petitioner persuades us that Conrad teaches or suggests variations of recovery tanks that would not have a lower portion protruding rearwardly beneath the battery. Pet. 58–62; Pet. Reply 12–13. Second, as discussed above, Patent Owner's arguments that Conrad does not disclose a battery in the claimed location rest on Patent Owner's incorrect claim construction requiring the battery to be “behind substantially the entirety of the selectively removable recovery tank.” PO Resp. 20–22; PO Sur-reply 6–8. Thus, to the extent Patent Owner is correct that Conrad's battery is not behind substantially the entirety of Conrad's recovery tank, that does not establish that Conrad's battery location differs from the claimed location. And Petitioner's arguments and evidence persuade us that Conrad's battery location meets Petitioner's correct claim construction: “at or near the rear of the selectively removable recovery tank.” Pet. 14–16, 18–19, 35–40, 55–63; Pet. Reply 11–14.

E. Asserted Obviousness over Xia, Conrad, Kitsukawa, and Onda

In this ground, Petitioner cites Onda to address portions of claim 20 related to “a moveable tray cover,” arguing that a person of ordinary skill in the art would have been motivated to combine Onda's teachings with those of Xia, Conrad, and Kitsukawa. Pet. 93–96. Patent Owner counters that a person of ordinary skill in the art would not have been motivated to combine

the references' teachings in the manner proposed by Petitioner. PO Resp. 25–29.

1. *“the charging unit comprising . . . a moveable tray cover operably coupled to the tray body and configured to move between a covered position wherein the at least one tray charging contact is covered and an opened position wherein the at least one tray charging contact is accessible”*

Petitioner argues that this limitation would have been obvious over Xia, Conrad, Kitsukawa, and Onda. Pet. 93–96; Pet. Reply 16–18. Petitioner cites Kitsukawa's protrusion-shaped charging station terminal part 28 as teaching the claimed “at least one tray charging contact,” arguing that it would have been obvious to apply Kitsukawa's disclosure of charging terminals to Xia's disclosure. Pet. 87–88. Petitioner further argues that Onda's shutter 24 teaches the claimed “moveable tray cover.” Pet. 93–95; Pet. Reply 16. Petitioner argues that “it would have been obvious to combine Onda's explicit disclosure of a moveable tray cover into the charging station disclosed in Kitsukawa to provide the Kitsukawa tray body with a moveable tray cover.” Pet. 95; Pet. Reply 17–18. Petitioner asserts that a person of ordinary skill in the art would have been motivated to do so to prevent damage to the terminals or electrical shock from improper handling. Pet. 95–96; Pet. Reply 18.

Patent Owner counters that a person of ordinary skill in the art would not have been motivated to use Onda's moveable tray covers with the charging contacts of Kitsukawa's charging station. PO Resp. 25–29; PO Sur-reply 9–10. Patent Owner contends that differences between the charging contacts of Kitsukawa's charging station and the charging contacts of Onda's charging station would have made it unobvious to use Onda's moveable tray cover with Kitsukawa's charging station. PO Resp. 26–29;

PO Sur-reply 9–10. Asserting that Kitsukawa’s charging terminals 28 sit higher than Onda’s charging terminals, Patent Owner suggests Kitsukawa’s charging terminals would not have needed protection from ingress of unwanted materials. PO Resp. 28–29. Additionally, Patent Owner asserts that the charging terminals covered by Onda’s moveable tray cover resemble the charging contacts of Kitsukawa’s battery, not the charging contacts of Kitsukawa’s charging station. *Id.* at 26–28. According to Patent Owner, this would have made it obvious to add Onda’s moveable tray cover to the charging contacts of Kitsukawa’s battery, instead of adding Onda’s moveable tray cover to the charging contacts of Kitsukawa’s charging station. *Id.* at 28.

Petitioner persuades us that it would have been obvious in view of the teachings of Xia, Conrad, Kitsukawa, and Onda to modify Xia’s disclosure to have the claimed charging unit with a moveable tray cover. Pet. 84–90, 93–96; Pet. Reply 16–18. Petitioner’s arguments and evidence that it would have been obvious to use a charging station like Kitsukawa’s to charge a battery in Xia’s surface cleaning apparatus are sound and undisputed by Patent Owner. Pet. 86–90. Additionally, Petitioner presents persuasive arguments and evidence that a person of ordinary skill in the art would have understood in view of Onda that charging terminals like those of Kitsukawa’s protrusion-shaped charging station terminal part 28 would have been vulnerable to damage. *Id.* at 95–96. Mr. Jones’s testimony that a person of ordinary skill in the art would have been motivated to address this recognized vulnerability by including a moveable cover like Onda’s is logical and supported by objective evidence. Ex. 1003 ¶¶ 249–254. We find this more persuasive than Patent Owner’s attorney argument that

Kitsukawa's terminals do not or may not need a cover to protect them from harm. PO Resp. 28–29; PO Sur-reply 10.

Additionally, Patent Owner does not dispute Petitioner's argument that a person of ordinary skill in the art would have recognized that exposed terminals could result in electric shock if handled improperly, which is supported with persuasive evidence. Pet. 95–96; Ex. 1003 ¶¶ 249, 254; *see generally* PO Resp.; PO Sur-reply. Petitioner and Mr. Jones persuade us that such a safety concern would have motivated a person of ordinary skill in the art to use a moveable tray cover like Onda's in combination with the charging contacts of Kitsukawa's charging station. Pet. 95–96; Ex. 1003 ¶¶ 249, 254.

Moreover, Patent Owner's comparisons of Onda's terminal to Kitsukawa's protrusion-shaped charging station terminal part 28 and recess-shaped body terminal part 9 do not undermine Petitioner's sound arguments and evidence that a person of ordinary skill in the art would have been motivated and able to modify Xia with a moveable tray cover in the manner proposed by Petitioner. PO Resp. 26–29; PO Sur-reply 9–10. Even if it is correct, Patent Owner's suggestion that it would have been obvious to add a moveable cover to the terminals on the surface cleaning apparatus does not persuade us that a person of ordinary skill in the art would have forgone adding a moveable cover for the terminals on the charging station. PO Resp. 28; PO Sur-reply 10. To the extent a person of ordinary skill in the art may have recognized a benefit to shielding the terminals on the surface cleaning apparatus, that does not negate Petitioner's showing that a person of ordinary skill in the art would have recognized certain benefits of shielding the terminals of the charging station. Pet. 95–96; Pet. Reply 16–18.

III. CONCLUSION

In summary:

Claim(s)	35 U.S.C. §	References/ Basis	Claim(s) Shown Unpatentable	Claim(s) Not Shown Unpatentable
2–6, 8, 20	103	Xia, Conrad, Kitsukawa	2–6, 8 ⁷	
20	103	Xia, Conrad, Kitsukawa, Onda	20	
Overall Outcome			2–6, 8, 20 ⁸	

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 2–6, 8, and 20 of U.S. Patent No. 11,147,426 B2 have been shown, by a preponderance of the evidence, to be unpatentable; and

⁷ As explained above in Section II.D, we do not reach Petitioner’s challenge of claim 20 as allegedly obvious over Xia, Conrad, and Kitsukawa.

⁸ Should Bissell wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Bissell’s attention to the April 2019 Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding, 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Bissell chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Bissell of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. §§ 42.8(a)(3), (b)(2).

FURTHER ORDERED that, because this is a Final Written Decision, the parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2022-01195
Patent 11,147,426 B2

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