

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GUANGZHO EKO TRADING DEVELOPMENT CO., LTD.,
Petitioner,

v.

NINE STARS GROUP (U.S.A.) INC.,
Patent Owner.

IPR2025-01191
Patent 10,822,165 B2

Before WILLIAM V. SAINDON, KARA L. SZPONDOWSKI,
and MARY C. HOFFMAN, *Administrative Patent Judges*.

SZPONDOWSKI, *Administrative Patent Judge*.

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

I. INTRODUCTION

Guangzho EKO Trading Development Co., Ltd. (“Petitioner”) filed a Petition (Paper 1, “Pet.”) to institute an *inter partes* review of claims 1–24 of U.S. Patent No. 10,822,165 B2, issued on November 3, 2020 (Ex. 1001, “the ’165 patent”). Nine Stars Group (U.S.A.) Inc. (“Patent Owner”) filed a Preliminary Response (Paper 7, “Prelim. Resp.”).

Institution of an *inter partes* review is authorized when “the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). Based on the current record, and for the reasons explained below, we determine that Petitioner has established a reasonable likelihood that it would prevail with respect to at least one challenged claim, and we institute an *inter partes* review.

II. BACKGROUND

A. *Real Parties-in-Interest*

Petitioner identifies itself, EKO North America Inc. and EKO Group, Ltd. as the real parties-in-interest. Pet. 2–3. Patent Owner identifies itself and Fujian Nashida Electronic Incorporated Company of the Fujian Province, China as the real parties-in-interest. Paper 4, 2 (Patent Owner’s Mandatory Notices).

B. *Related Matters*

The parties identify the following district court case involving the ’165 patent: *Nine Stars Group USA Inc. v. Guangzhou EKO Trading Development Co., Ltd.*, 5-24-cv-01843 (C.D. Cal.). Pet. 3; Paper 4, 2.

C. The '165 Patent (Ex. 1001)

The '165 patent is titled “Waterproof Induction Actuated Container” and is generally directed to a “waterproof induction container, wherein the electrical and mechanical components are sealed in a concealed compartment of the container to prevent any contamination of the electrical and mechanical components by moisture, corrosive gas, and/or trash residuals.” Ex. 1001, 1:29–33. Figure 1, which shows a preferred embodiment of a waterproof induction container, is reproduced below:

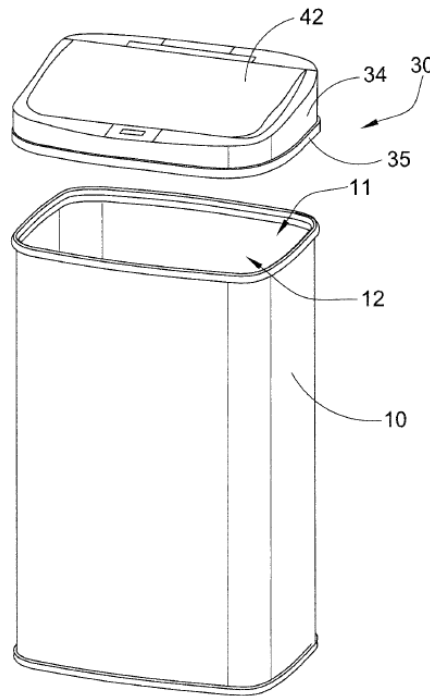


FIG. 1

Ex. 1001, 4:23–25. Figure 1 shows container body 10 with storage cavity 11 and container opening 12, and a cover unit with cover panel 42 and control housing 30.

Figure 2, which shows a perspective view of the cover unit of the waterproof induction container, is reproduced below:

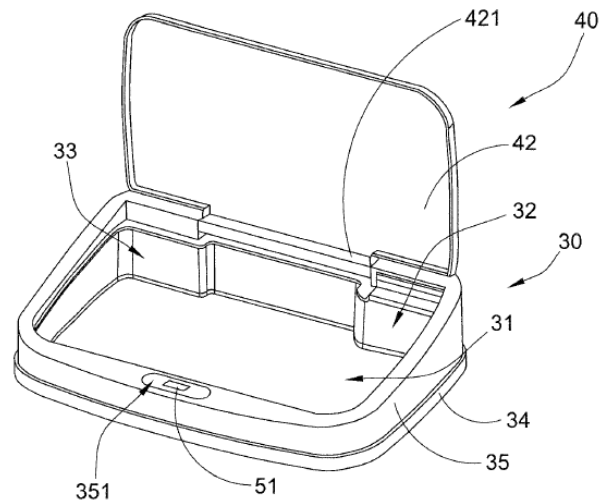
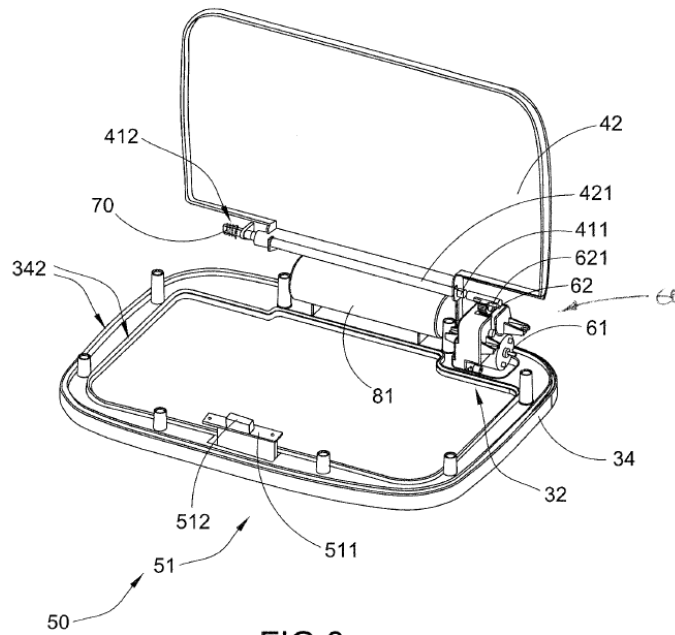


FIG. 2

Ex. 1001, 4:26–28. Figure 2 shows cover unit 40, including control housing 30 with cover opening 31, first and second side concealed compartments 32, 33, and sensor unit 51. Sensor unit 51 “detect[s] a target movement of a user.” *Id.* at 5:30–32.

Figure 3, which shows a perspective view of the induction actuated container cover of the waterproof induction container, is reproduced below:



Ex. 1001, 4:29–32. Figure 3 shows, among other things, actuation unit 60 comprising servo motor 61 supported in first concealed compartment 32 of control housing 30 and gear transmission unit 62 operatively coupled between first end portion 411 of pivot shaft 41 and servo motor 61. *Id.* at 7:6–12. “[A]ctuation unit 60 is actuated to move the cover panel 42 via the pivot shaft 41 between the open and closed positions.” *Id.* at 5:36–38.

Figure 4, which shows an exploded perspective view of the induction actuated container cover without the upper casing, is reproduced below.

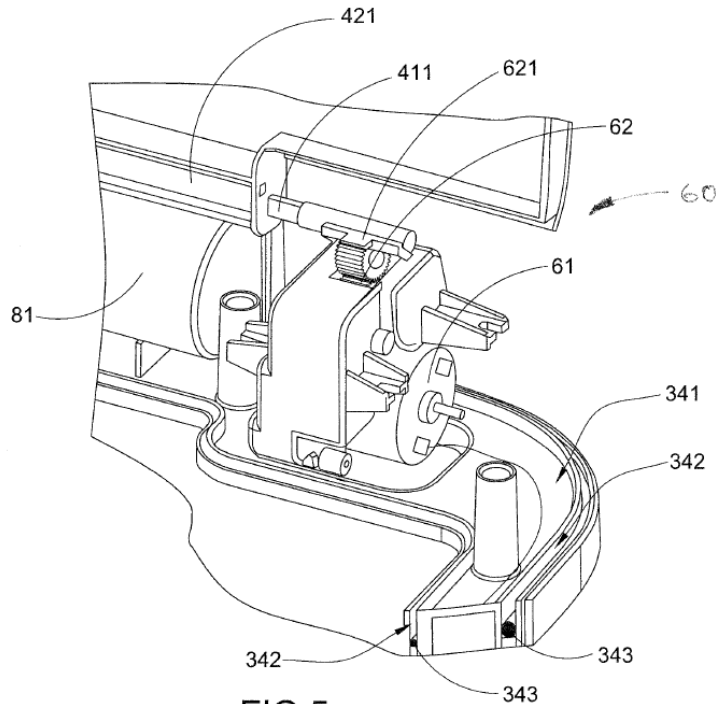


FIG.5

Ex. 1001, 4:37–38. Figure 5 shows, among other things, servo motor 61 and gear transmission unit 62 with gear worm sector 621. *Id.* at 7:37–43. “[A] curvature of the gear worm sector 621 is configured corresponding to the rotational movement of the pivot shaft 41 to allow the cover panel 42 to move between the open and closed positions.” *Id.* at 7:43–48.

Figure 6, which shows a rear view of a power supply unit, is reproduced below:

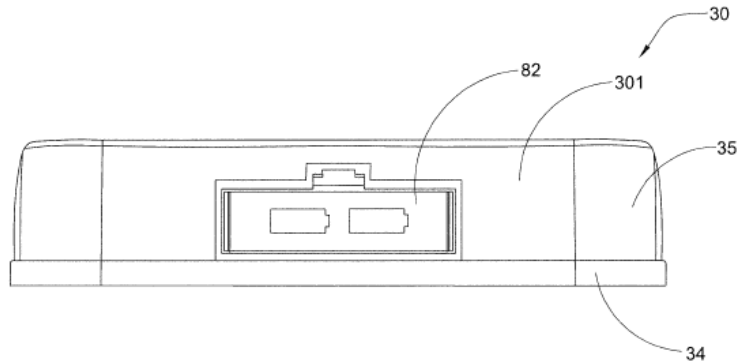


FIG.6

Ex. 1001, 4:41–42. Figure 6 shows, among other things, control housing 30, rear wall 301 of control housing 30, base frame 34, upper casing 35, and battery compartment cover 82. Ex. 1001, 4:41–42, 6:57, 8:30–41. The “battery compartment cover 82 [is] detachably coupled at a rear wall 301 of the control housing 30 to enclose the battery compartment 81.” *Id.* at 8:19–21.

Figure 7, which shows a sectional view of an induction actuated container, is reproduced below:

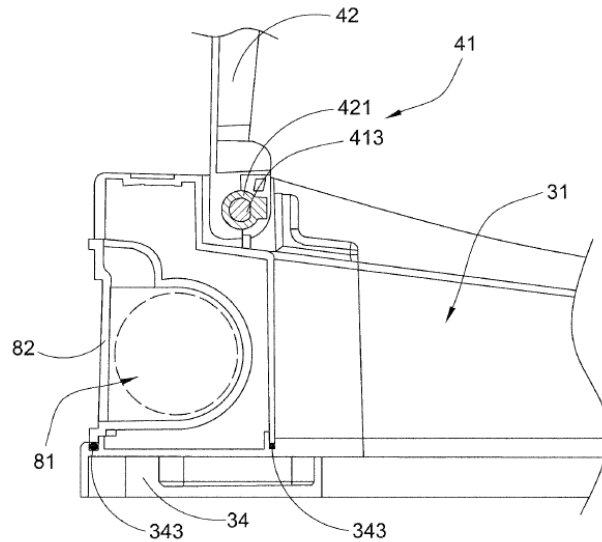


FIG. 7

Ex. 1001, 4:44–46. Figure 7 shows, among other things, cover panel 42, shaft sleeve 421, and exposed portion of the pivot shaft 413. Ex. 1001, 4:33–36, 6:19–22.

D. Illustrative Claims

Independent claim 1 is representative, and is reproduced below, with Petitioner's identifiers in bolded brackets.

1. **[1-p]** A waterproof induction container, comprising:
[1-1] a container body having a storage cavity and a container opening; and
[1-2] an induction actuated container cover which comprises:
[1-2-A] a control housing detachably coupled at said container body at said container opening thereof, wherein said control housing has first and second side concealed compartments formed at a rear portion of said control housing, and a cover opening formed between said first and second side concealed compartments to communicate with said storage cavity of said container body;

[1-2-B] a cover unit which comprises a pivot shaft having first and second end portions extended into said first and second side concealed compartments respectively, and a cover panel pivotally mounted to said control housing via said pivot shaft to pivotally move between a closed position that said cover panel covers at said cover opening to enclose said storage cavity and an opened position that said cover panel exposes said cover opening for communicating with said storage cavity; and

[1-2-C] an automatic driving arrangement, which comprises:

[1-2-C-1] a sensor unit mounted at said control housing for detecting a target movement of a user;

[1-2-C-2] an actuation unit concealed in said first side concealed compartment of said control housing in a waterproof manner to operatively link with said sensor unit and to operatively coupled to said pivot shaft, wherein said actuation unit is actuated to move said cover panel via said pivot shaft between said opened and closed positions; and

[1-2-C-3] an element arranged to initially push up said cover panel simultaneously when said cover panel is started to move from said closed position and partially offsetting a weight of said cover panel when said cover panel is started to move from said opened position.

Ex. 1001, 9:22–9:56.

E. Prior Art and Asserted Challenges to Patentability

Petitioner asserts that claims 1–24 are unpatentable based on the following challenges (Pet. 5):

Claim(s) Challenged	35 U.S.C. §¹	Basis/References
1–24	102(a)(1), 103	Wang ²

In support of its proposed challenges, Petitioner relies on the Declaration of Steven C. Visser. *See* Ex. 1006.

III. ANALYSIS

A. Legal Standards

A claim is unpatentable as anticipated under 35 U.S.C. § 102 “if each and every limitation is found either expressly or inherently in a single prior art reference.” *WhitServe, LLC v. Computer Packages, Inc.*, 694 F.3d 10, 21 (Fed. Cir. 2012) (quoting *Celeritas Techs., Ltd. v. Rockwell Int’l Corp.*, 150 F.3d 1354, 1361 (Fed. Cir. 1998)). An anticipatory reference must also “disclose those elements ‘arranged as in the claim.’” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008) (quoting *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983)).

A claim is unpatentable as obvious under 35 U.S.C. § 103 if “the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains.” 35 U.S.C. § 103; *see also KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. §§ 102, 103 effective March 16, 2013, is before the ’165 patent’s effective filing date. *See* Ex. 1001, codes (22), (63). Therefore, the AIA version of § 103 applies. *See* Pet. 4 (stating that the ’165 patent is a continuation of an application filed on September).

² Wang et al., CN 203740427 U (published July 30, 2014) (Exs. 1004, 1005 (translation)).

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) objective evidence of nonobviousness, i.e., secondary considerations. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

“In an [*inter partes* review], 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)); *see also Intelligent BioSystems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016). At this preliminary stage, we determine whether the information presented in the Petition shows there is a reasonable likelihood that Petitioner would prevail in establishing that at least one of the challenged claims are anticipated or would have been obvious.

B. Level of Ordinary Skill in the Art

Petitioner contends a person of ordinary skill in the art “would have had a degree in industrial design, industrial engineering, mechanical engineering, or an equivalent field, along with 2 years of consumer product design experience.” Pet. 12 (citing Ex. 1006 ¶ 57). Petitioner further contends the person of ordinary skill in the art “would have been aware of and generally knowledgeable about the types of materials processes and component employed in typical consumer products.” *Id.*

At this stage of the proceeding, Patent Owner does not dispute Petitioner’s proposed definition. *See generally* Prelim. Resp.

Based on the current record, we adopt Petitioner’s proposed level of ordinary skill in the art for purposes of this Decision, as it is consistent with the level of ordinary skill in the art reflected by the prior art of record.

C. Claim Construction

Petitioner proposes that all terms be given their plain and ordinary meaning. Pet. 11–12. Patent Owner, in the context of its arguments, alleges various definitions for the terms “automatic” and “pivotally moving” (claim 1), “servo motor” (claim 2), “gear worm sector” (claim 3), “in a hydraulic manner” (claim 4), and “corresponding” (claims 18, 20, 22). Prelim. Resp. 21–23, 25, 30, 33. However, Patent Owner does not offer reasoning nor cite to any evidence, intrinsic or extrinsic, supporting its proposed construction of these terms. Therefore, any dispute as to the meaning of these terms is best resolved on a complete record during trial.

After reviewing the record, we determine that no express claim construction is necessary for purposes of this Decision. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’” (alteration in original) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

D. Alleged Anticipation Over Wang

Petitioner contends that Wang anticipates claims 1–24. Pet. 13–59. Having considered the arguments and evidence before us, we find that the record establishes a reasonable likelihood that Petitioner would prevail on establishing unpatentability of at least claim 1 under this challenge. As set

forth by Petitioner, Wang discloses figures nearly identical to those in the '165 patent. *See* Pet. 13–15.

1. *Wang (Exs. 1004, 1005)*³

Wang is a Chinese utility model patent application bearing a “Publication Date” of July 30, 2014. Ex. 1005, code (45). Wang is titled “Waterproof Sensing Trashcan” and is generally directed to “a waterproof sensing trash can that has a compact structure, a proper design, a stable and reliable transmission mechanism, and good waterproof, moisture-proof, and corrosion-proof performance.” *Id.* at code (54), ¶ 3.

Figure 2, which shows an upper can body and a lower can body separated from each other, is reproduced below:

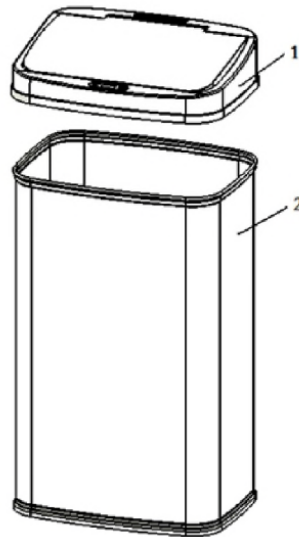


FIG. 2

³ Petitioner relies on Exhibit 4, which is published in Chinese. Pet. 4–5. Exhibit 1005 is the certified English translation of Wang, and is accompanied by a translator’s declaration. *Id.* at 5. Citations and discussion of Wang throughout this decision are referring to the translation.

Ex. 1005 ¶ 10. Figure 2 shows upper can body 1 and lower can body 2. *Id.* ¶ 18.

Figure 3, which shows a schematic diagram of an upper can body, is reproduced below.

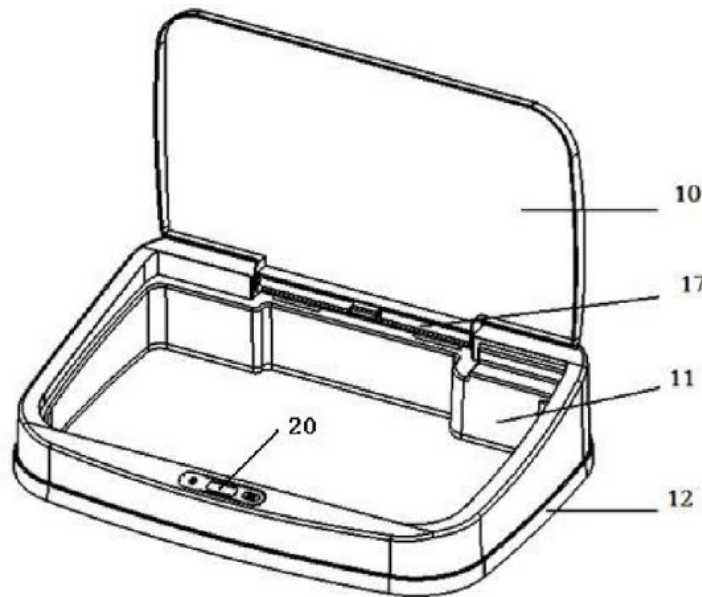


FIG. 3

Ex. 1005 ¶ 11. Figure 3 shows, among other things, upper can body 1, including annular middle body seat 12 that is buckled on lower can body 2, annular covered housing 11 buckled on annular middle body seat 12, can cover 10 that is hinged to annular covered housing 11 by using a rotating shaft 17 fixedly connected under can cover 10, and two ends of rotating shaft 17 extend into inner cavities of annular covered housing 11. *Id.* ¶ 18.

Figure 4, which shows a schematic diagram of a structure of an upper can body from which an annular covered housing is removed, is reproduced below:

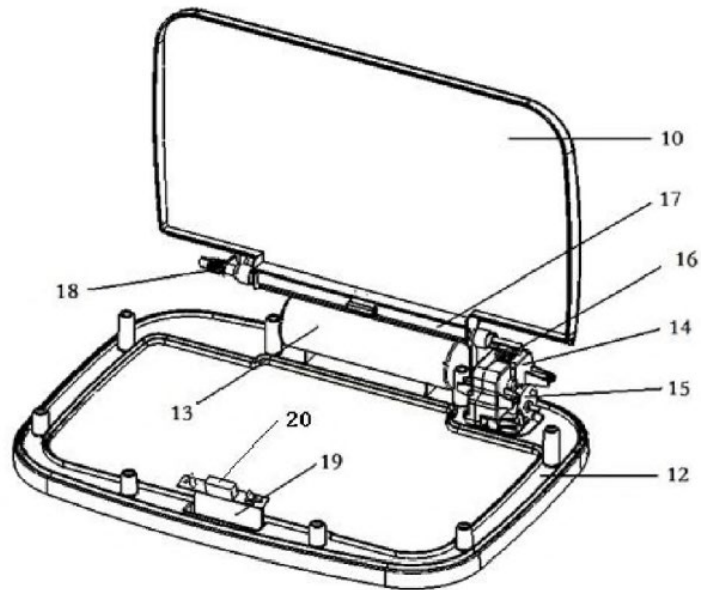


FIG. 4

Ex. 1001 ¶ 12. Figure 4 shows, among other things, upper can body 1, including a sensing opening-closing apparatus with sensor 20, circuit board 19, battery box 13, motor 15, and transmission mechanism. *Id.* ¶ 18. Wang describes that “[w]hen a hand approaches the sensing trash can, the sensor 20 sends a signal” and “the circuit board 19 drives the motor 15 to rotate” and “the can cover 10 is driven to open.” *Id.* ¶ 23.

Figure 5, a schematic diagram of a transmission mechanism, is reproduced below.

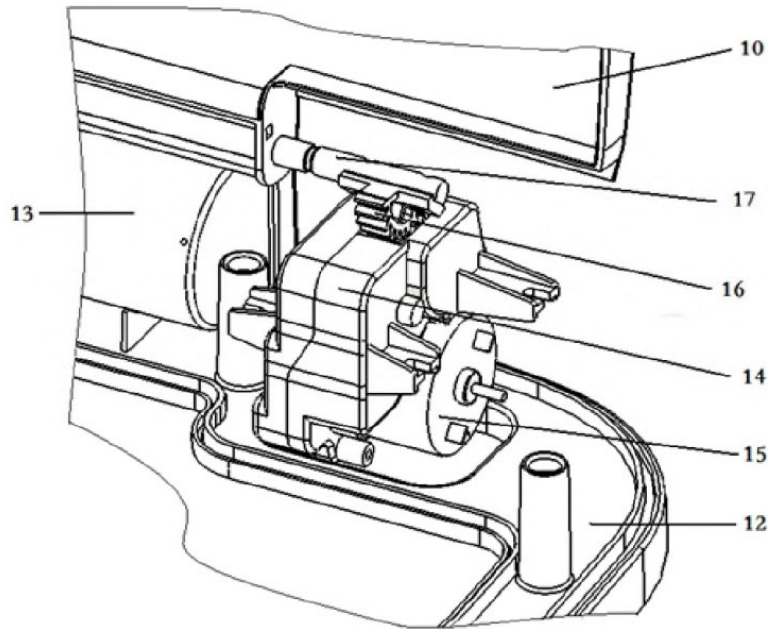


FIG. 5

Figure 5 shows, among other things, motor 15 and sector gear 16. Ex. 1005 ¶¶ 13, 18, 21. Motor 15 “drives, by using the sector gear [1]6, the can cover 10 to open and close.” *Id.* ¶ 20.

Figure 6, a rear view of an upper can body, is reproduced below.

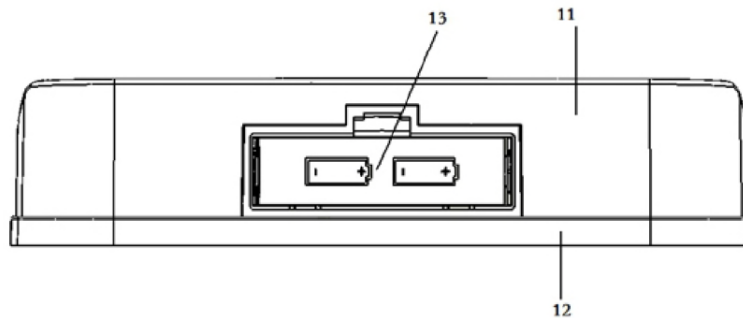


FIG. 6

Figure 6 shows, among other things, middle body seat 12, annular covering housing 11, and battery box 13. Ex. 1005 ¶¶ 14, 18, 20.

Figure 7, a partial sectional view of an upper can body in a left view, is reproduced below:

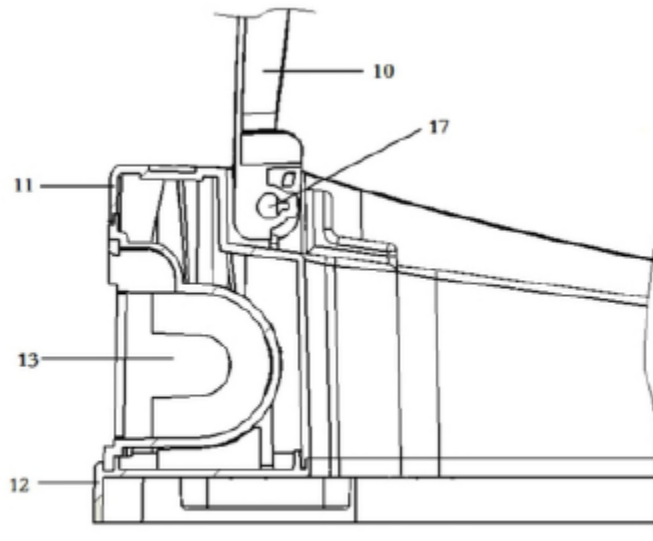


FIG. 7

Figure 7 shows, among other things, a sectional view of rotating shaft 17, can cover 10, and battery box 13. Ex. 1005 ¶¶ 15, 18.

2. *Whether Wang is Prior Art*

Petitioner contends that, given Wang's publication date of July 30, 2014, Wang is prior art under 35 U.S.C. § 102(a)(1). Pet. 12. Petitioner argues that Wang discloses the same trashcan as the '165 patent and that Wang's inventors overlap the inventors of the '165 patent. *Id.* However, Petitioner argues, the '165 patent cannot and did not claim priority to Wang. *Id.* at 12–13. Patent Owner argues that Petitioner has not established that Wang qualifies as prior art because Petitioner has not shown that Wang was “available to the public” as a printed publication. Prelim. Resp 16–18.

Relying on *Medtronic, Inc. v. Barry*, 891 F.3d 1368, 1380-81 (Fed. Cir. 2018), Patent Owner argues that “[t]he date appearing on a document does not conclusively establish public availability.” Prelim. Resp. 17; *see also id.* at 18 (relying on *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29 at 19–20 (PTAB Dec. 20, 2019)). Patent Owner further argues that Petitioner must establish (1) “[t]hat the document was actually published on the stated date”; (2) “[t]hat the document was publicly accessible as of that date”; and (3) “[t]he circumstances of public availability.” *Id.* at 18 (citing *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1348–49 (Fed. Cir. 2016)). Patent Owner argues that Petitioner has not established the public availability of Chinese utility model patents, like Wang, as of July 2014. *Id.* Patent Owner argues that “Chinese utility models follow a different examination process than U.S. patents.” *Id.*

Petitioner bears the burden of establishing that Wang is a printed publication. *Medtronic*, 891 F.3d at 1380. The determination of whether a document is a “printed publication” “involves a case-by-case inquiry into the facts and circumstances surrounding the reference's disclosure to members of the public.” *In re Klopfenstein*, 380 F.3d 1345, 1350 (Fed. Cir. 2004). “[A]t the institution stage, the petition must identify, with particularity, evidence sufficient to establish a reasonable likelihood that the reference was publicly accessible before the critical date of the challenged patent and therefore that there is a reasonable likelihood that it qualifies as a printed publication.” *Hulu*, IPR2018-01039, Paper 29 at 13.

As set forth above, Wang is a Chinese utility model patent application bearing a “Publication Date” of July 30, 2014. Ex. 1005, code (54). “[T]he indicia on the face of a reference, such as printed dates and stamps, are

considered as part of the totality of the evidence.” *Hulu*, IPR2018-01039, Paper 29 at 17–18; *see also id.* at 17 (“We do not hold that any particular indicia per se is sufficient at the institution stage”). Therefore, Wang’s publication date is relevant evidence that can support a finding that Wang qualifies as a printed publication. We note that none of the cases that Patent Owner relies on involve a foreign patent publication. In *Hulu*, the panel found that a textbook published by an established publisher that had a copyright date, printing date, and ISBN date on the face of the reference was sufficient evidence to establish a reasonable likelihood that the reference was a printed publication. *Hulu*, IPR2018-01389, Paper 29 at 19–20. Here, Wang is a foreign patent application publication from China with a publication date on the face of the document. We find that sufficient to show that Wang is a printed publication for purposes of institution.

3. *Analysis of Independent Claim 1*

a) 1[p] — “A waterproof induction container, comprising”

Petitioner contends that Wang discloses a waterproof trashcan (i.e., container) that is an “induction container” because it includes electrical and mechanical components that “automatically opens (and then closes) when a hand is detected nearby.” Pet. 17–18 (citing, *e.g.*, Ex. 1005 codes (54), (57), ¶¶ 1, 2–5, 8, 10, 23).

At this stage, Patent Owner does not challenge Petitioner’s contentions as to the preamble.

Based on the record before us, we determine that Petitioner’s cited evidence sufficiently supports its contentions that Wang discloses the preamble.⁴

b) *Limitation [1-1]* — “a container body having a storage cavity and a container opening;”

Petitioner contends that Wang’s lower can body 2 discloses the “container body,” the interior of lower can body 2 discloses the “storage cavity,” and the top of lower can body 2 is the “container opening.” Pet. 18 (citing Ex. 1005, Fig. 2, ¶¶ 2, 18, 20).

At this stage, Patent Owner does not challenge Petitioner’s contentions as to limitation [1-1].

We determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

c) *Limitation [1-2]* — “an induction actuated container cover”

Petitioner contends that Wang’s upper can body 1 discloses the “container cover” and is “induction actuated” because the electrical and mechanical components open the cover upon detection of a hand. Pet. 19 (citing Ex. 1005, ¶¶ Fig. 1, 18, 20, 23).

At this stage, Patent Owner does not challenge Petitioner’s contentions as to limitation [1-2].

We determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

⁴ Because we are persuaded that Petitioner has shown that Wang teaches the subject matter recited in the preamble, we need not decide whether the preamble is limiting for purposes of this Decision. At this stage, neither party has presented arguments that the preamble is limiting.

- d) Limitation [1-2-A] — “a control housing detachably coupled at said container body at said container opening thereof, wherein said control housing has first and second side concealed compartments formed at a rear portion of said control housing, and a cover opening formed between said first and second side concealed compartments to communicate with said storage cavity of said container body”*

Petitioner contends that Wang’s annular covering housing 11 and attached annular middle body seat 12 disclose the “control housing,” which is “detachably coupled” to the end of Wang’s lower can body 2 that includes a “container opening.” Pet. 20–21 (citing Ex. 1005 ¶ 18, Figs. 1, 2, 3). Further, Petitioner contends that Wang’s “inner cavities” in the “annular covered housing 11” disclose the “first and second side concealed compartments formed at a rear portion of said control housing.” *Id.* at 21–22 (citing Ex. 1005 ¶ 18, Figs. 3, 4). Petitioner further asserts that a “cover opening” is located between the two “inner cavities.” *Id.* at 22 (citing Ex. 1005, Figs. 3, 4).

At this stage, Patent Owner does not challenge Petitioner’s contentions as to limitation [1-2-A].

We determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

- e) Limitation [1-2-B] – “a cover unit which comprises a pivot shaft having first and second end portions extended into said first and second side concealed compartments respectively, and a cover panel pivotally mounted to said control housing via said pivot shaft to pivotally move between a closed position that said cover panel covers at said cover opening to enclose said storage cavity and an opened position that said cover*

panel exposes said cover opening for communicating with said storage cavity”

Petitioner contends that Wang discloses a cover unit as recited. Specifically, Petitioner contends that Wang’s rotating shaft 17 extending into the inner cavities of the annular covering housing 11 discloses the “pivot shaft having first and second end portions extended into said first and second side concealed compartments.” Pet. 23–24 (citing Ex. 1005, Figs. 3, 4, 5, ¶¶ 4, 13, 18). Petitioner also contends that Wang’s can cover 10 discloses the “cover panel,” and is fixed to rotating shaft 17 that extends into its cover housing 11, which causes the “can cover” to be “hinged to the annular covering housing” via the attached “rotating shaft,” and the shaft is driven by a rotating motor to open/close the cover to allow trash to be thrown into the container (i.e., “pivotally mounted to said control housing via said pivot shaft to pivotally move between a closed position that said cover panel covers at said cover opening to enclose said storage cavity and an opened position that said cover panel exposes said cover opening for communicating with said storage cavity”). *Id.* at 24–26 (citing Ex. 1005, Figs. 1, 3, 7, ¶¶ 4, 15, 18, 20, 23).

Patent Owner argues that the cover being “hinged” does not mean that the cover is “pivotally moving,” as recited. Prelim. Resp. 21–22. Patent Owner provides various descriptions of hinges, hinge connections, and hinge mechanisms, arguing that not all involve pivotal movement. *Id.* at 22–23. Patent Owner further argues that the claim requires “rotational movement around the longitudinal axis of the pivot shaft,” “the pivot shaft serving as the axis of rotation,” and “the cover panel rotating in an arc as the shaft

rotates,” but Wang does not describe this type of movement. *Id.* at 22–23 (emphasis and some capitalization omitted).

Petitioner has sufficiently shown that Wang discloses this limitation for purposes of institution. Patent Owner does not offer reasoning nor cite to any evidence, intrinsic or extrinsic, for its proposed construction of “pivotally moving.” Regardless, Wang discloses that “can cover 10 is hinged to the annular covering housing 11 by using a *rotating shaft* 17 fixedly connected under the can cover 10,” which appears consistent with the claim requirements. Ex. 1005 ¶ 18 (emphasis added). Moreover, a side-by-side comparison of Figure 3 of the ’165 patent and Figure 4 of Wang, reproduced below, shows the same configuration:

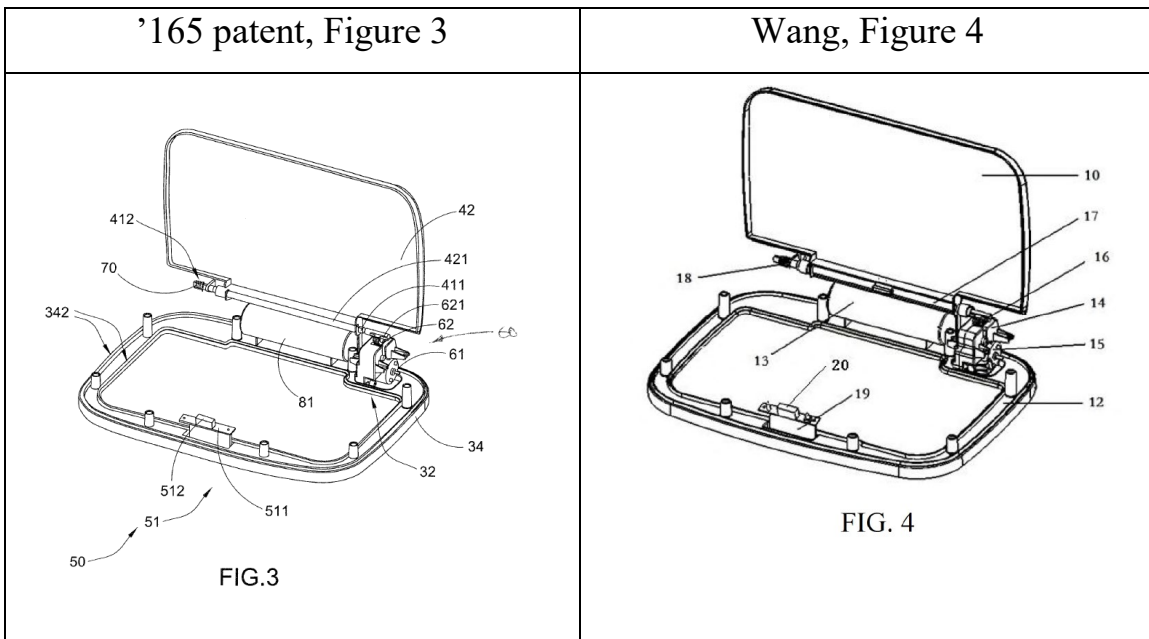


Figure 3 of the ’165 patent and Figure 4 of Wang are depicted above. Although the figures use different numerical identifiers, the figures appear to be identical.

We also disagree with Patent Owner’s arguments that Petitioner’s alternative obviousness argument (Ground 2) “implicitly concedes that Wang does not expressly disclose pivotal movement,” and that Mr. Visser “does not believe Wang expressly discloses this limitation” because Mr. Visser only addresses “pivotally moving” in the context of the obviousness ground. Prelim. Resp. 23. An alternative argument is an alternative, not a concession. And as the Federal Circuit has explained, expert testimony is not required when the references and the invention are easily understandable.” *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1242 (Fed. Cir. 2010) (citing *Perfect Web Techs., Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1329 (Fed. Cir. 2009)). Moreover, our rules also do not require expert testimony. Rather, the Petition must contain “[a] full statement of the reasons for the relief requested, including a detailed explanation of the significance of the evidence including material facts, and the governing law, rules, and precedent.” 37 C.F.R. § 42.22(a).

Accordingly, we determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

f) Limitation [1-2-C] – “an automatic driving arrangement, which comprises”

Petitioner contends that Wang’s “sensing opening-closing apparatuses” within the “annual covering housing 11” that “allows the trashcan to automatically open (and then close) ‘[w]hen a hand approaches the sensing trash can’” disclose the “automatic driving arrangement.” Pet. 26–27 (citing Ex. 1005 ¶¶ 18, 23).

Patent Owner argues that Wang “does not explicitly describe its driving arrangement as ‘automatic.’” Prelim. Resp. 19–21. Patent Owner

argues that Wang’s reference to “intelligent automatic” trashcans appears in the “Background” section and describes prior art trash cans, not Wang’s invention. *Id.* at 20. Patent Owner further argues that although Wang’s “mechanism is sensor-triggered, sensor triggering is not synonymous with automatic operation.” *Id.* at 21. According to Patent Owner, “[t]he term ‘automatic’ in the context of the claims means operating without human intervention or control beyond initial setup.” *Id.* Patent Owner argues that a “sensor-triggered mechanism” is at odds with “truly ‘automatic’ operation” because it may require precise hand placement at a specific distance and angle, deliberate user action to trigger the sensor, and multiple attempts if the sensor fails to detect motion. *Id.*

Petitioner has sufficiently shown that Wang discloses this limitation for purposes of institution. Patent Owner does not offer reasoning nor cite to any evidence, intrinsic or extrinsic, for its proposed construction of “automatic.” Moreover, Patent Owner’s argument appears inconsistent with the disclosure in the ’165 patent, which states that

The automatic driving arrangement comprises a sensor unit mounted at the control housing for detecting a target movement of a user, and an actuation unit concealed in the first side concealed compartment of the control housing . . . to operatively link with the sensor unit and to operatively couple[] to the pivot shaft, wherein the actuation unit is actuated to move the cover panel via the pivot shaft between the open and closed positions.

Ex. 1001, 4:4–12; *see also id.* at 1001, 5:30–38 (same), 3:48–62 (describing conventional induction containers using sensors to automatically lift and lower the cover panel), 8:50–63 (describing the sensor driven automatic driving arrangement). As cited by Petitioner, Wang similarly describes a

sensor 20 that sends a signal when a hand approaches the sensing trashcan, which drives the motor to rotate and open the can cover 10. Ex. 1005 ¶¶ 18, 23. Moreover, there is no requirement that a reference, “duplicate word for word what is in the claims,” so Patent Owner’s arguments that Wang does not explicitly describe its arrangement as “automatic” is not persuasive. *See Standard Havens Prods., Inc. v. Gencor Indus., Inc.*, 953 F.2d 1360, 1369 (Fed. Cir. 1991).

Accordingly, we determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

g) Limitation [1-2-C-1] – “a sensor unit mounted at said control housing for detecting a target movement of a user”

Petitioner contends that Wang’s “sensor 20” discloses the “sensor unit,” and is attached to the middle body seat 12 and “detect[s] a target movement of a user” (i.e., detects a nearby hand). Pet. 27–28 (citing Ex. 1005, Fig. 5, ¶¶ 4, 6, 18, 19, 23).

At this stage, Patent Owner does not challenge Petitioner’s contentions as to limitation [1-2-C-1].

We determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

h) Limitation [1-2-C-2] – “an actuation unit concealed in said first concealed compartment of said control housing in a waterproof manner to operatively link with said sensor unit and to operatively coupled to said pivot shaft, wherein said actuation unit is actuated to move said cover panel via said pivot shaft between said opened and closed positions”

Petitioner contends that Wang’s motor 15, transmission mechanism, and sector gear 16 disclose the “actuation unit,” which is located within annular covering housing 11’s inner activity such that it is protected from

water/moisture/exposure (i.e., concealed in first said concealed compartment of said control housing in a waterproof manner”). Pet. 28–29 (citing Ex. 1005, ¶¶ 8, 18, 23). Petitioner further contends that Wang’s motor 15 operates in response to sensor 20 (i.e., is “operatively linked with said sensor unit”) and drives rotating shaft 17 via sector gear 16 (i.e., is “operatively coupled to said pivot shaft”), and cause can cover 10 to open when a hand is detected (i.e., “is actuated to move said cover panel via said pivot shaft between said opened and closed positions”). *Id.* at 29–31 (citing Ex. 1005, Figs. 3, 4, 5).

At this stage, Patent Owner does not challenge Petitioner’s contentions as to limitation [1-2-C-2].

We determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

- i) Limitation [1-2-C-3] – “an element arranged to initially push up said cover panel simultaneously when said cover panel is started to move from said closed position and partially offsetting a weight of said cover panel when said cover panel is started to move from said opened position”*

Petitioner contends that Wang’s torsion spring 18, which “offset[s] some of the gravity of the can cover 10, so that the motor can open the can cover 10 with a relatively small power,” discloses the recited “element.” Pet. 31–32 (quoting Ex. 1005 ¶ 22, also citing Figs. 3, 4, ¶ 7).

At this stage, Patent Owner does not challenge Petitioner’s contentions as to limitation [1-2-C-3].

We determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

j) Conclusion for Independent Claim 1

Based on our review and consideration of the current record, we determine that Petitioner has adequately shown that Wang discloses claim 1 for purposes of institution. Accordingly, we determine, on the current record and for purposes of this Decision, that the information presented in the Petition demonstrates a reasonable likelihood that claim 1 is anticipated by Wang.

4. Dependent Claims

Because we determine that Petitioner has demonstrated a reasonable likelihood of prevailing on its challenge to claim 1, we institute *inter partes* review on all claims and grounds. *See* 37 C.F.R. § 42.108(a) (“When instituting . . . review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim.”). Nonetheless, in this section, we will provide observations on the parties’ positions with respect to the dependent claims argued by Patent Owner.

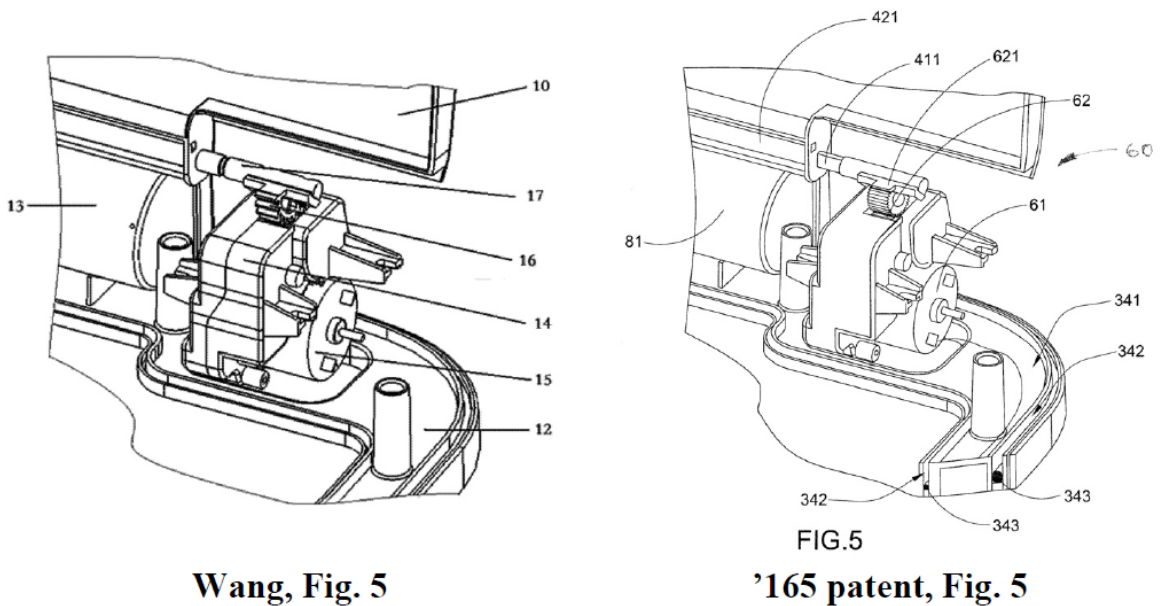
a) Claim 2

Claim 2 depends from claim 1 and recites “wherein said actuation unit comprises a servo motor supported in said first side concealed compartment of said control housing and a gear transmission unit operatively coupled between said first end portion of said pivot shaft and said servo motor for transmitting a rotational power from said servo motor to said pivot shaft.” Ex. 1001, 9:58–63.

Petitioner contends that Wang’s motor 15 (“servo motor”) and gear transmission and sector gear 16 (“gear transmission unit”) are located within the inner cavity in annular covered housing 11 (“supported in said first side

concealed compartment”), and motor 15’s power is transmitted to shaft 17 via the gear transmission and sector gear 6 (“gear transmission unit” is “operatively coupled between said first end portion of said pivot shaft and said servo motor” to “transmit[] . . . rotational power”). Pet. 33–34 (citing Ex. 1005 (¶¶ 4, 18, 20–23)).

Petitioner provides an annotated, color-coded version of Wang’s Figure 5, identifying each of the recited elements. Pet. 34. Petitioner contends that although Wang does not label its motor 15 as a “servo” motor, that is the type of motor it employs. *Id.* Petitioner compares Wang’s Figure 5 with Figure 5 of the ’165 patent, arguing that “both employ structurally indistinguishable motors.” *Id.* at 34–35. Petitioner’s side-by-side comparison of the two figures is reproduced below:



Pet. 35. Wang’s Figure 5 is shown on the left, and Figure 5 of the ’165 patent is shown on the right. Wang’s Figure 5 shows “a schematic diagram of a transmission mechanism.” Ex. 1005 ¶ 13. Figure 5 of the ’165 patent

shows “an actuation driving arrangement.” Ex. 1001, 4:37–38. Petitioner contends that Wang and the ’165 patent depict the use of the same motor and describe the operation of the motor in the same way, so Wang “plainly employs the same type of ‘servo motor’ used by the ’165 patent in its example and required by the claims.” Pet. 35.

Patent Owner argues that Petitioner’s admission that Wang does not label its motor 15 as a “servo” motor is fatal to the anticipation ground. Prelim. Resp. 24. Patent Owner also argues that the visual similarity in the figures is not sufficient. *Id.* at 24–25. Patent Owner also argues that “servo motors” have specific technical characteristics, such as closed-loop control systems with feedback, precise position, velocity, or torque control, real-time error correction, and specific controller circuits to process feedback. *Id.* at 25. According to Patent Owner, Wang discloses none of these characteristics. *Id.* at 25–26. Finally, Patent Owner argues that Petitioner’s reliance on the functional similarity between the ’165 patent’s motor and Wang’s motor fails because that does not mean Wang’s motor is a “servo” motor. *Id.* at 26–27.

As discussed above, Wang need not use identical language to the ’165 patent, so Patent Owner’s arguments that Wang does not use the term “servo motor” is not persuasive. Although patent drawings not designated as being drawn to scale cannot be relied upon to define precise proportions of elements if the specification is completely silent on the issue, *Hockerson-Halberstadt, Inc. v. Avia Group Int’l, Inc.*, 222 F.3d 951, 956 (Fed. Cir. 2000), that does “not mean that things patent drawings show clearly are to be disregarded.” *In re Mraz*, 455 F.2d 1069, 1072 (CCPA 1972) (emphasis omitted). In fact, “[d]escription for purposes of anticipation can be by

drawings alone as well as by words.” *In re Bager*, 47 F.2d 951, 953 (CCPA 1931). A drawing teaches all that it reasonably discloses and suggests to a person of ordinary skill in the art. *In re Aslanian*, 590 F.2d 911, 914 (CCPA 1979). Figure 5 of Wang appears to be identical to Figure 5 of the ’165 patent, aside from the use of different numeric labelling. Comparing Figure 5 of Wang and Figure 5 of the ’165 patent, we agree with Petitioner that Wang’s motor 15 appears to be very similar, if not identical, to the ’165 patent’s servo motor 61. We also agree with Petitioner that the functionality of motor 15 in Wang and servo motor 61 in the ’165 patent are similarly described. *Compare* Ex. 1005 ¶¶ 18, 20–23 *with* Ex. 1001, 7:6–23.

Moreover, Patent Owner does not offer reasoning nor cite to any evidence, intrinsic or extrinsic, for its proposed construction of “servo motor” or its assertions as to the technical characteristics and functionality of a “servo motor.”

b) Dependent Claims 3, 4, 7, 10, and 16–24

Patent Owner’s arguments challenging dependent claims 3, 4, 7, 10, and 16–24 are similar to those raised for claim 2, and do not persuade us to deny institution for the same reasons discussed above. That is, we are not persuaded by arguments that Wang does not use the same terminology as the ’165 patent, and similarly, Patent Owner does not offer reasoning nor cite to any evidence, intrinsic or extrinsic, for its proposed construction of “gear worm sector” (claim 3) or “in a hydraulic manner” (claim 4) or its assertions as to the technical characteristics and functionality of a “gear worm sector” (claim 3) and “in a hydraulic manner” (claim 4). Prelim. Resp. 27–36.

Furthermore, comparing figures of the ’165 patent and Wang, we note the similarities, as identified by Petitioner. Pet. 36–45; *compare* Figure 5 of

the '165 patent (“worm sector 621”) *with* Figure 5 of Wang (“sector gear 16”) (claim 3); *compare* Figure 6 of the '165 patent (“battery compartment cover 82”) *with* Figure 6 of Wang (“battery box 13”) (claims 7, 16, 23); *compare* Figure 7 of the '165 patent (“shaft sleeve 421” and “pivot shaft 413”) *with* Figure 7 of Wang (“rotating shaft 17” and surrounding area) (claims 18, 20, 22); *compare* Figure 4 of the '165 patent (“front concealed compartment 36”) *with* Figure 3 and ¶ 18 of Wang (“inner cavity formed between the middle body seat 12 and the annular covered housing 11”) (claims 10, 13, 24); *compare* Figures 3, 4, and 7 of the '165 patent (e.g., “pivot shaft 41”) *with* Figures 3, 4, and 7 of Wang (e.g., “rotating shaft 17”) (claims 17, 19, 21)).

c) Claims 5, 6, 8, 9, 11, 12, 14, 15,

At this stage, Patent Owner does not challenge Petitioner’s contentions as to claims 5, 6, 8, 9, 11, 12, 14, and 15. Because Petitioner meets the threshold for institution for claim 1 under this ground, we need not decide whether Petitioner’s challenges to these other dependent claims demonstrate the same. Those challenges, in our view, are best left for trial after full development of the record.

E. Alleged Obviousness Over Wang

Petitioner also contends that claims 1–24 would have been obvious over Wang. Pet. 50–59. Petitioner contends that “there are some minor differences in the language used by the '165 patent and Wang,” which a person of ordinary skill in the art “would not have considered . . . meaningful.” *Id.* at 51. Therefore, Petitioner argues, a person of ordinary skill in the art would conclude that the '165 patent’s claims are obvious over Wang. *Id.* Having considered the arguments and evidence before us, we

also find that the record establishes a reasonable likelihood that Petitioner would prevail on at least claim 1 in this asserted ground of unpatentability.

1. Analysis of Independent Claim 1

Petitioner's contentions for limitations [1-1], [1]2, [1-2-A], [1-2-B], [1-2-C-1], [1-2-C-2], and [1-2-C-3] are discussed above. We address Petitioner's contentions and Patent Owner's arguments for limitations [1-2-B] and [1-2-C] below.

- a) Limitation [1-2-B] – “a cover unit which comprises a pivot shaft having first and second end portions extended into said first and second side concealed compartments respectively, and a cover panel pivotally mounted to said control housing via said pivot shaft to pivotally move between a closed position that said cover panel covers at said cover opening to enclose said storage cavity and an opened position that said cover panel exposes said cover opening for communicating with said storage cavity”*

Petitioner contends that a person of ordinary skill in the art would have understood that Wang employs a cover that is “pivotally moving” because it describes its cover as “hinged,” indicating that the cover pivots (or rotates) along with rotating shaft 17 along that shaft's longitudinal axis. Pet. 52–53 (citing Ex. 1005 Figs. 2, 3, ¶¶ 4, 18; Ex. 1006 ¶¶ 137–143).

Patent Owner contends that Petitioner's analysis is conclusory and that Petitioner has not sufficiently explained why Wang teaches this limitation. Prelim. Resp. 38–39.

We disagree. Petitioner's analysis, supported by Mr. Visser's testimony (Ex. 1006 ¶¶ 137–143), sufficiently shows that Wang teaches this limitation for purposes of institution. For example, Mr. Visser's testimony relies on the disclosure in Wang and provides further explanation as to what

a person of ordinary skill in the art would understand based upon those teachings. Ex. 1006 ¶¶ 137–143. Therefore, we determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

b) Limitation [1-2-C] — “an automatic driving arrangement”

Petitioner contends that a person of ordinary skill in the art would have understood Wang’s can is meant to be automatic because it improves upon an existing “[i]ntelligent [a]utomatic [f]lip [g]arbage can” and because it is a “sensing trash can.” Pet. 52 (citing Ex. 1005 code (57), ¶¶ 1, 2, 4, 8, 23; 1006 ¶¶ 129–136).

Patent Owner argues that Petitioner’s analysis is conclusory and that Petitioner has not sufficiently explained why Wang teaches this limitation. Prelim. Resp. 38.

We disagree. Petitioner’s analysis, supported by Mr. Visser’s testimony (Ex. 1006 ¶¶ 129–136), sufficiently shows that Wang teaches this limitation for purposes of institution. For example, Mr. Visser’s testimony relies on the disclosure in Wang and provides further explanation as to what a person of ordinary skill in the art would understand based upon those teachings. Ex. 1006 ¶¶ 129–136. Therefore, we determine that, on the record before us, Petitioner’s cited evidence sufficiently supports its contentions regarding this limitation.

c) Conclusion for Independent Claim 1

Based on our review and consideration of the current record, we determine that the information presented in the Petition demonstrates a reasonable likelihood that claim 1 is obvious over Wang.

2. *Dependent Claims*

As discussed above, because Petitioner meets the threshold for institution for claim 1, we need not decide whether Petitioner's challenges to the other dependent claims demonstrate the same. Nonetheless, in this section, we will provide observations on the parties' positions with respect to the dependent claims argued by Patent Owner.

Petitioner provides alternative theories for dependent claims 2, 3, 4, 7, 16, 18, 20, 22, and 23 as to why a person of ordinary skill in the art would have considered those limitations to be obvious in light of Wang, supported by Wang's disclosure and testimony from Mr. Visser. Pet. 53–59 (citing, *e.g.*, Ex. 1006 ¶¶ 144–200).

Patent Owner generally presents the same types of arguments for each of the dependent claims. Prelim. Resp. 39–45. For example, Patent Owner argues that Petitioner's contentions are not adequately supported, that the "improvements" asserted by Petitioner are motivated by hindsight, and that Petitioner provides no articulated reason why a person of ordinary skill in the art would modify Wang as proposed. *Id.* Patent Owner also argues that Mr. Visser's declaration is conclusory and does not provide sufficient technical analysis. *Id.* at 42–45.

We have reviewed Patent Owner's arguments for the dependent claims and find that they largely consist of unsupported attorney argument that does not directly address Petitioner's contentions. For example, with respect to dependent claim 2 ("servo motor"), Patent Owner argues, among other things, that the references Petitioner cites in support for its contentions that servo motors were known, available, and routinely used to open and close the lid of a waste receptacle (Pet. 54), do not show a servo motor in

Wang’s configuration, explain why a person of ordinary skill in the art would use a servo motor instead of Wang’s disclosed motor, and that availability does not establish obviousness. Prelim. Resp. 39–40. However, these arguments do not address Mr. Visser’s cited testimony, which provides explanation as to why a person of ordinary skill in the art would have considered it obvious to use a servo motor in Wang’s trash can. *See* Ex. 1006 ¶¶ 144–161. We disagree that Mr. Visser’s testimony is conclusory and technically insufficient. Moreover, Petitioner provides various rationale for why a person of ordinary skill in the art would be motivated to use a servo motor, such as providing precise, repeatable motion, allow Wang’s trashcan to account for dirt and debris, and made Wang’s trashcan more energy efficient. Pet. 54–55; Ex. 1006 ¶¶ 151–161. We are not persuaded, on this record, that this rationale constitutes impermissible hindsight, as these benefits are disclosed in Wang. *See* Ex. 1005 ¶¶ 18 (“waterproof, moisture-proof, and corrosion-proof performance, thereby greatly improving reliability and a service life”), 21 (“stable transmission, reliable operation, high transmission efficiency, small space occupied, a long service life”), 22 (“saving electricity and prolonging a service life of the motor”). Patent Owner’s arguments for the other dependent claims suffer from similar deficiencies.

3. *Secondary Considerations*

Patent Owner also argues that the Petition ignores evidence of secondary considerations. Prelim. Resp. 45–47. Patent Owner argues that it is prepared to present evidence of commercial success, long-felt need, industry praise, copying, and failure of others. *Id.*

At this stage, Patent Owner has not presented evidence or arguments of secondary considerations. Therefore, because we have no evidence or argument on secondary considerations on the current record, they cannot constitute part of our analysis here. *See Consolidated Trial Practice Guide*,⁵ Section II.A.6. (Oct. 2025) (“In determining whether the subject matter of a claim would have been obvious over the prior art, the Board will review any objective evidence of nonobviousness proffered by the patent owner where appropriate.”); *see also* 37 C.F.R. § 42.107(a) (“a preliminary response . . . can include supporting evidence”). To the extent that Patent Owner presents evidence and arguments regarding secondary considerations, they will be considered on a full record at trial.

IV. PATENT OWNER’S 35 U.S.C. § 325(D) ARGUMENTS

Patent Owner presents arguments directed to discretionary considerations under 35 U.S.C. § 325(d) and requests the Petition be denied based on these arguments. Prelim. Resp. 2–16. However, Patent Owner’s § 325(d) arguments are untimely under the “Interim Director Discretionary Process,”⁶ and, as such, will not be considered by the Board. *See* Section I.C. (“The . . . patent owner should not present discretionary considerations in the . . . Patent Owner Preliminary Response (POPR)”); Section I.E. (“[A] Board panel will issue a decision on institution addressing the merits and other non-discretionary considerations.”).

⁵ Available at <https://www.uspto.gov/patents/ptab/trial-practice-guide#step1>

⁶ <https://www.uspto.gov/patents/ptab/interim-director-discretionary-process>.

V. CONCLUSION

After considering the evidence and arguments presented, we determine Petitioner has established a reasonable likelihood of prevailing on its assertion that at least one claim of the '165 patent is unpatentable on at least one ground, and we institute an *inter partes* review on all the challenged claims and challenges presented in the Petition. *See* 37 C.F.R. § 42.108(a) (“When instituting *inter partes* review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim”).

VI. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that pursuant to 35 U.S.C. § 314, *inter partes* review is instituted as to the challenged claims of the '165 patent and all challenges of unpatentability presented in the Petition; and

FURTHER ORDERED that *inter partes* review is commenced on the entry date of this Order, and pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial.

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Patent 10,822,165 B2

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