

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.

IROBOT CORPORATION,

Patent Owner.

IPR2021-00545

Patent 7,571,511 B2

Before BARRY L. GROSSMAN, TERRENCE W. MCMILLIN, and
JASON W. MELVIN, *Administrative Patent Judges*.

MELVIN, *Administrative Patent Judge*.

DECISION

Granting Institution of *Inter Partes* Review

35 U.S.C. § 314

I. INTRODUCTION

SharkNinja Operating LLC, SharkNinja Management LLC, and SharkNinja Sales Company (“Petitioner”)¹ filed a Petition to institute an *inter partes* review of claims 1, 8–12, 14, 16–19, 22–25, 32–34, 36, 37, 55, 56, and 62 (the “challenged claims”) of U.S. Patent 7,571,511 B2 (Ex. 1001, the “511 patent”) pursuant to 35 U.S.C. § 311 *et seq.* Paper 1 (“Petition” or “Pet.”). iRobot Corporation (“Patent Owner”)² filed a Preliminary Response. Paper 6 (“Preliminary Response” or “Prelim. Resp.”). After considering the Petition, the Preliminary Response, and the evidence of record, we institute *inter partes* review.

A. RELATED PROCEEDINGS

The parties identify the following related proceedings:

In the Matter of Certain Robotic Floor Cleaning Devices and Components Thereof, Inv. No. 337-TA-1252³ (US International Trade Commission) (the “ITC investigation”); and

iRobot Corp. v. SharkNinja Operating LLC, Case No. 1:21-cv-10155 (Mass.) (the “District Court litigation”). Pet. 88; Paper 4, 2.

¹ Petitioner identifies SharkNinja Operating LLC, SharkNinja Management LLC, and SharkNinja Sales Company as the real parties-in-interest. Pet. 80.

² Patent Owner identifies iRobot Corporation as the real party-in-interest. Paper 4, 2.

³ Petitioner refers to this as 337-TA-3530, but the ITC website indicates 3530 is the docket number, not the investigation number. *See* <https://pubapps2.usitc.gov/337external/3979>.

B. THE '511 PATENT

The '511 patent is titled "Autonomous Floor Cleaning Robot" (Ex. 1001, code (54)), with an object of providing "a cleaning device that is operable without human intervention to clean designated areas" (*id.* at 1:65–67). The patent discloses "an autonomous floor-cleaning robot that comprises a self-adjustable cleaning head subsystem that includes a dual-stage brush assembly having counter-rotating, asymmetric brushes and an adjacent, but independent, vacuum assembly such that the cleaning capability and efficiency of the self-adjustable cleaning head subsystem is optimized while concomitantly minimizing the power requirements." *Id.* at 1:23–31. Figure 2, reproduced below, is an isometric drawing of a claimed autonomous floor-cleaning robot embodiment.

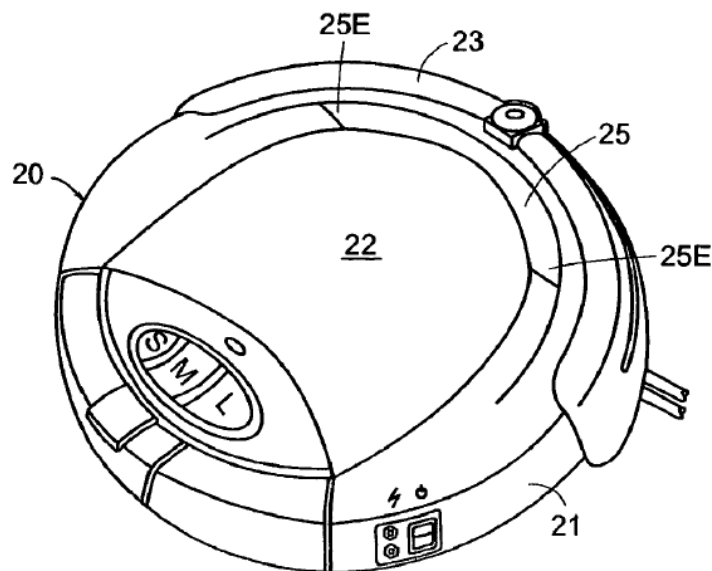


Figure 2 shows chassis 21, cover 22, displaceable bumper 23, and carrying handle 25. *Id.* at 3:33–36.

Figure 2A, reproduced below shows a "bottom plan view" of the autonomous robot.

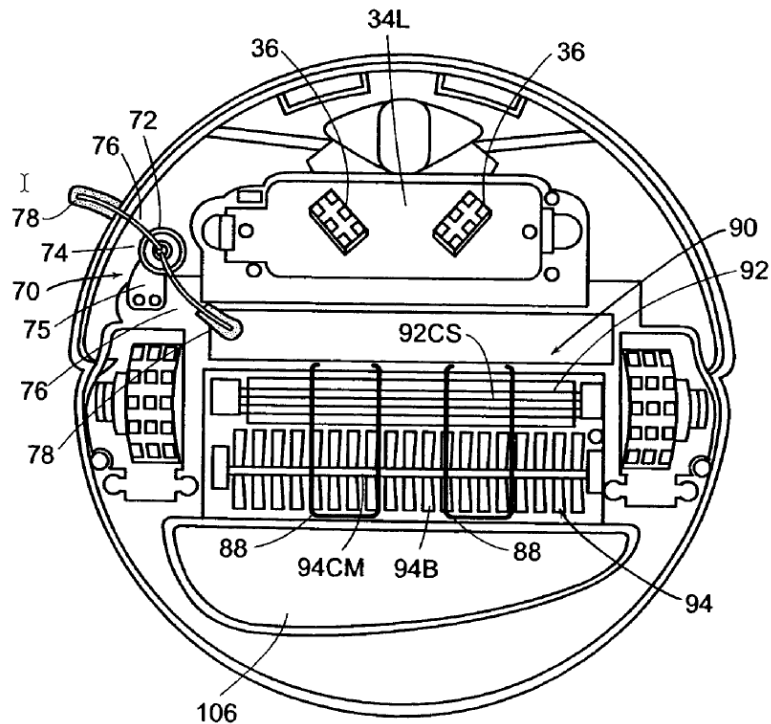


Figure 2A additionally shows “side brush assembly 70.” *Id.* at 3:36–43.

C. CHALLENGED CLAIMS

Petitioner challenges claims 1, 8–12, 14, 16–19, 22–25, 32–34, 36, 37, 55, 56, and 62 of the '511 patent. Pet. 1. Challenged claims 1, 24, and 55 are independent.⁴ Claim 1 is reproduced below.

1. A floor-cleaning robot comprising:
 - a wheeled housing defining a housing perimeter,
 - a motor drive operably connected to wheels of the housing to propel the robot across a floor surface;
 - an obstacle detector responsive to obstacles encountered by the robot;
 - a control circuit in electrical communication with both the obstacle detector and the motor drive and configured to control the motor drive to maneuver the robot to avoid

⁴ Independent claim 39 is not challenged.

- detected obstacles across the floor surface during a floor cleaning operation;
- a powered primary brush assembly configured to rotate about an axis generally parallel to the floor surface disposed across a central region of an underside of the housing and positioned to brush the floor surface as the robot is propelled across the floor surface; and
- a powered side brush extending beyond the housing perimeter and positioned to brush floor surface debris from beyond the housing perimeter toward a projected path of the primary brush assembly.

Ex. 1001, 16:23–43.

D. THE ASSERTED GROUNDS

Petitioner challenges claims 1, 8–12, 14, 16–19, 22–25, 32–34, 36, 37, 55, 56, and 62 of the '511 patent based on the grounds set forth in the table below.

Claims Challenged	35 U.S.C. §	References
1, 8–12, 16, 18, 19, 22–25, 32–34, 37, 55, 56, 62	103	Bisset ⁵ , Toyoda ⁶
1, 8–12, 16, 18, 19, 22–25, 32–34, 37, 55, 56, 62	103	Bisset, Ye ⁷
14, 36	103	Bisset, Toyoda, Jones ⁸
14, 36	103	Bisset, Ye, Jones

⁵ WO 00/38026, published June 29, 2000 (Ex. 1005). Petitioner contends this reference is prior art under 35 U.S.C. § 102(b). Pet. 9.

⁶ JP 2000-353014 A, published December 19, 2000 (Ex. 1007, Certified Translation of Ex. 1006). Petitioner contends this reference is prior art under 35 U.S.C. § 102(b). Pet. 10.

⁷ CN 2389761Y, published Aug. 2, 2000 (Ex. 1026, Certified Translation of Ex. 1025). Petitioner contends this reference is prior art under 35 U.S.C. § 102(b). Pet. 12.

⁸ Joseph L. Jones, et al., “Mobile Robots: Inspiration to Implementation”, ISBN 1-56881-097-0, 1998 (Ex. 1008). Petitioner contends this reference is prior art under 35 U.S.C. § 102(b). Pet. 76.

Claims Challenged	35 U.S.C. §	References
16, 17	103	Bisset, Toyoda, Horst ⁹
16, 17	103	Bisset, Ye, Horst

See Pet. 3. Petitioner also relies on the Declaration of Dr. Mitchell Pryor (Ex. 1003, “Pryor Decl.”), which provides evidence in support of the contentions in the Petition. Patent Owner has not submitted a declaration or other testimonial evidence of an expert, and has not argued that any of the cited references do not qualify as prior art. *See generally* Prelim. Resp.

II. ANALYSIS

A. DISCRETIONARY DENIAL UNDER 35 U.S.C. § 314(a) BASED ON PARALLEL PROCEEDING

Patent Owner contends we should exercise our discretion to deny the Petition under § 314(a), because “[i]dential invalidity issues are actively being litigated in a parallel ITC investigation involving the parties, which will be resolved before the Board’s final written decision, and which the ITC has already refused to stay.” Prelim. Resp. 5. As guided by our precedent, we consider a number of factors when determining whether to deny institution based on the parallel ITC investigation. *See Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 5–6 (PTAB Mar. 20, 2020) (precedential).

1. Whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted

Patent Owner argues that “ITC investigation is not stayed and is unlikely to be stayed,” and that on “April 20, 2021, the ALJ issued an order denying SharkNinja’s motion to stay.” Prelim. Resp. 6 (citing Ex. 2003).

⁹ US 3,732,590, issued May 15, 1973 (Ex. 1015). Petitioner contends this reference is prior art under 35 U.S.C. § 102(b). Pet. 82.

Petitioner does not dispute that, or otherwise contend that a possible ITC stay favors institution. Thus, this factor favors exercising discretion to deny institution.

2. Proximity of the court's trial date to the Board's projected statutory deadline for a final written decision

The ITC investigation has a target date for completion on August 29, 2022, which is slightly before the deadline for a final written decision in this proceeding (one year after this Institution Decision). Ex. 2004, 5.

Additionally, numerous other events in the ITC investigation, including an initial determination, will precede the conclusion of this proceeding. *Id.*; see Prelim. Sur-Reply 7 (emphasizing the significance of ITC events before the target date). As discussed below, however, given the minimal, if any, overlap between the issues in the ITC investigation and this proceeding, the time overlap has less significance. We determine that this factor is neutral.

3. Investment in the parallel proceeding by the court and the parties

The parties have invested some work in the ITC investigation. Prelim. Resp. 10–11. The parties have not apprised us of substantive orders issued in the ITC investigation, though Patent Owner asserts that a claim-construction order is expected shortly. *Id.* at 11 (“[A] Markman order prior to the institution deadline is likely so that the parties can prepare their opening expert reports in the ITC, which are due more than two weeks before institution.”) (citing Ex. 2004).

Moreover, Petitioner filed the Petition here only one day after the ITC initiated its investigation. See Prelim. Reply 6 (citing Ex. 2005; Ex. 1036); *Fintiv*, IPR2020-00019, Paper 11, 11 (“If the evidence shows that the petitioner filed the petition expeditiously, such as promptly after becoming

aware of the claims being asserted, this fact has weighed against exercising the authority to deny institution under NHK.”). Thus, although the ITC proceeding has completed substantial fact discovery and some expert discovery (*see* Prelim. Resp. 10–11), that is not a result of Petitioner’s delay.

Given the diligence of the Petitioner and the work that remains to be done, we conclude this factor weighs against exercising discretion to deny institution.

4. *Overlap between issues raised in the petition and in the parallel proceeding*

Petitioner submits that, “if the Board institutes this IPR, it will not pursue any grounds that were raised or reasonably could have been raised in this IPR against the ’511 patent in the ITC investigation or in district court.” Prelim. Reply 3 (citing Ex. 1035). Thus, there will not be duplication of substantive arguments between this proceeding and the ITC investigation (or district court). Patent Owner argues that Petitioner’s stipulation came too late and shows hallmarks of gamesmanship. Prelim. Sur-Reply 1–5. But the primary prejudice of which Patent Owner complains is “wasteful devotion of limited preliminary briefing” to issues that shifted. *Id.* at 3. We are not persuaded by this argument especially when Patent Owner chose to use significantly less than the permitted word count for its Preliminary Response. *See* Prelim. Resp. 45. Moreover, Petitioner’s stipulation (regardless of its timing) promotes efficiency by eliminating duplication between proceedings, and thus promotes one of the Board’s primary interests in determining whether to discretionarily deny institution. *See Fintiv*, IPR2020-000019, Paper 11, 5–6. Petitioner’s stipulation “mitigates any concerns of duplicative efforts” between this proceeding and others,

along with “concerns of potentially conflicting decisions.” *Sotera Wireless, Inc. v. Masimo Corp.*, IPR202-01019, Paper 12, 15 (PTAB Dec. 1, 2020) (precedential as to § II.A). Thus, this factor weighs strongly against exercising discretion to deny institution.

5. *Whether the petitioner and the defendant in the parallel proceeding are the same party*

The parties in the District Court litigation and the ITC investigation and this proceeding are the same. Thus, this factor weighs in favor of exercising discretion to deny institution.

6. *Other circumstances that impact the Board's exercise of discretion, including the merits.*

Petitioner urges that it presents a substantively strong case, weighing against discretionary denial. Pet. 6–7. Patent Owner disagrees. Prelim. Resp. 18. We do not express a view on the strength of Petitioner’s substantive case other than our determination that it demonstrates Petitioner is reasonably likely to succeed with respect to patentability of at least one claim. This factor does not weigh for or against denying institution in this case.

7. *Holistic assessment of factors and conclusion*

We consider the above factors and take “a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review.” *Fintiv*, Paper 11 at 6. Although the ITC has declined to stay that proceeding and has a target date to complete the investigation slightly before our final written decision, other factors overcome that. In weighing the totality of the evidence, Petitioner’s diligence in promptly

filing the Petition and stipulation to avoid duplication both persuade us not to exercise discretion under § 314(a) to deny institution.

B. DISCRETIONARY DENIAL UNDER § 325(d)
BASED ON PREVIOUSLY CONSIDERED ART AND ARGUMENTS

Patent Owner contends that we should discretionarily deny institution because the Petitioner presents “the same or substantially the same prior art or arguments previously . . . presented to the Office.” Prelim. Resp. 20 (quoting 35 U.S.C. § 325(d) (emphasis omitted)).

[U]nder § 325(d), the Board uses the following two-part framework: (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6, 8 (PTAB Feb. 13, 2020) (precedential).

As Petitioner acknowledges, Bisset was cited on an information disclosure statement (IDS) during prosecution of the ’511 patent. Pet. 7 (citing Ex. 1002). In addition, Bisset was applied by the Examiner during prosecution of applications related to the ’511 patent. Pet. 8 (citing Ex. 1022); Prelim. Resp. 23–29 (citing Ex. 2011 (“the ’680 application”); Ex. 2012 (“the ’804 application”)). Thus, Bisset previously was presented to the Office. *See Advanced Bionics*, Paper 6 at 7–8.

Although Petitioner asserts Bisset in combination with references that were not applied by the Examiner during prosecution (for any of the three relevant applications), Patent Owner argues that the secondary references

here are not meaningfully different from references the Examiner applied. Prelim. Resp. 22–29.

Patent Owner submits that, in the '680 application, the Examiner rejected claims requiring a “driven side brush” over combinations of Bisset and a side-brush reference—either Yonkers¹⁰ or Hwang¹¹—and reasoned that the combination would have been obvious to “more effectively remove material from in front of the main body [of Bisset].” *Id.* at 24–25 (quoting Ex. 2011, 295). Similarly, Patent Owner points to the '804 application, in which the Examiner applied a combination of Bisset and Haaga¹² and reasoned that the combination would have been obvious to “more effectively remove material from areas that cannot be reached by the central cleaning brush.” *Id.* at 26 (quoting Ex. 2012, 257–58).

Advanced Bionics explained that the relevant prosecution history includes “a proceeding pertaining to the challenged patent.” IPR2019-01469, Paper 6, 10. The Board noted that such proceedings include “examination of the underlying patent application, reexamination of the challenged patent, a reissue application for the challenged patent, and AIA post-grant proceedings involving the challenged patent.” *Id.* at 8. While *Advanced Bionics* did not address prosecution of applications related to the challenged patent, other Board panels have. *See Apple Inc. v. SEVEN Networks, LLC*, IPR2020-00285, Paper 10, 28–31 (July 28, 2020); *Live Nation Entm't, Inc. v. Complete Entm't Res. B.V.*, PGR2017-00038, Paper 11 at 15 (PTAB Jan. 16, 2018).

¹⁰ US 3,978,539, issued Sept. 7, 1976. *See* Ex. 2011, 293.

¹¹ US 5,568,589, issued Oct. 22, 1996. *See* Ex. 2011, 293.

¹² US 5,896,611, issued Apr. 27, 1999 (Ex. 1037).

In *SEVEN Networks*, a panel considered art and arguments that arose during prosecution of a child application sharing a common specification with the patent under challenge. *Id.* at 28–29. Although the patent owner in that proceeding argued that the claims were “substantially similar” to those considered in the child application, the panel was not persuaded that the facts warranted discretionary denial based on “a separate and distinct application with separate and distinct claims.” *Id.* at 30. It further relied on a lack of substantive consideration by the prior examiner. *Id.* The panel reasoned additionally that the IPR references had not been applied or cited during prosecution of the challenged patent. *Id.* at 31.

In *Live Nation*, a panel considered art and arguments arising during prosecution of a child application sharing a common specification with the patent under challenge. *Live Nation*, PGR2017-00038, Paper 11, 8–9. The panel noted that “the claims of the [child] patent are very similar to the claims of the [challenged] patent.” *Id.* at 9. Further, considering the child application, the panel determined that the examiner had found claims with the same limitations as those challenged in the PGR to be patentable over the same art. *Id.* at 13–17.¹³ Because of the strong overlap between the issues in the child-application prosecution and the PGR petition, the panel exercised its discretion to deny institution. *Id.* at 17–18.

As to the art considered during child-application prosecution, Petitioner distinguishes two of the references, Yonkers and Haaga, as

¹³ While the *Live Nation* PGR included an additional reference to address the limitation the examiner had found patentable over the art, the panel determined that the petition substantively failed to justify using the relevant teaching from that additional reference. *Live Nation*, PGR2017-00038, Paper 11, 16–17.

relating to a manual floor sweeper and, thereby differing from the references cited in the Petition. *See* Prelim. Reply 7. Patent Owner points out, however, that, in the '680 application, Examiner also applied Hwang, which discloses a driven side brush, and that Haaga's brushes could be electrically driven. *See* Ex. 2011, 295; Ex. 1037, 7:14–16; Prelim. Sur-Reply 9. Thus, the additional art asserted here does not appear to be substantially different from some of the art considered during prosecution of the child applications.

The claims here, on the other hand, are not the same as the claims considered in the child applications. According to Patent Owner, the Examiner allowed the child-application claims after finding persuasive the applicant's argument that "there is no reason to add side brushes to Bisset because Bisset is specifically made to already include any potential capabilities arising from such a modification." Prelim. Resp. 25–26 (citing Ex. 2011, 360, 410–11). Patent Owner does not address, however, that the claims at issue in the '680 application required a "cliff detector . . . located on the same side as the driven side brush, behind the side brush, and forward of the wheels," an aspect the Examiner relied on when describing the Allowable Subject Matter. Ex. 2011, 410–11. As Petitioner points out, the '511 patent's claims challenged here do not recite that feature. Prelim. Reply 8.

Similarly, in the '804 application, the claims recited a number of limitations not recited by the challenged claims here. *See* Ex. 2012, 206–07. The Examiner rejected those claims based on a seven-reference combination. Ex. 2012, 254–58. And the applicant made numerous arguments against the Examiner's rejection. *Id.* at 302–13. The Examiner did

not indicate which of the arguments was significant to allowance, instead treating them as a whole. *Id.* at 339.

The notable differences between the child-application claims and the challenged claims here persuade us that, overall, the Office has not previously considered the art or arguments presented here. While the Office considered Bisset during prosecution of the '511 patent and, with respect to the other references, considered substantially the same art in the child-application prosecutions, whether “the same or substantially the same prior art” was “presented to the Office” requires that the art was presented in connection with the challenged claims, or claims with sufficient similarities to justify exercising discretion. We determine the claims here lack sufficient similarity to those considered during the child-application prosecutions, and thus that the prosecution histories do not sufficiently indicate an overlap of issues previously considered. Thus, we find that under the first part of the *Advanced Bionics* framework, the same or substantially the same art was not previously presented.

Further, we determine Petitioner has demonstrated that, to the extent the Office did previously consider the art or arguments presented here, it erred. The relevant overlap between the child-application prosecutions and this proceeding relates to modifying Bisset to add a powered side brush. *See* Prelim. Resp. 27 (“[T]he Patent Office repeatedly considered combinations involving the addition of a side brush to Bisset, and in each instance, such combinations were at least partly overcome by the Office acknowledging that Bisset has no need for a side brush due to its asymmetric main brush that protrudes beyond the housing allowing the robot to clean up against a wall.”). As discussed below, Petitioner sufficiently supports that a skilled

artisan would have had reason to combine a powered side brush with Bisset’s robotic cleaner. *See, e.g.*, Ex. 1003 ¶¶ 55–60. Patent Owner contends that Petitioner failed “to explain how the Office purportedly erred” (Prelim. Sur-Reply 10), but we view Petitioner’s challenge as doing exactly that. The present record indicates that it would be an error to conclude that skilled artisans would not have had reason to modify Bisset to add a power brush. Thus, we also find that Petitioner demonstrates material error by the Office.

Accordingly, we conclude that the record does not warrant discretionarily denying institution here.

C. OBVIOUSNESS OVER BISSET AND TOYODA OR BISSET AND YE
Petitioner relies on Bisset for most aspects of claim 1, relying on Toyoda or Ye (as alternative grounds) for the powered side brush. Pet. 22–35.

1. *Bisset*

Bisset, entitled “Sensors Arrangement” (Ex. 1005, code (54)), “relates to an arrangement of sensors for an autonomous vehicle, particularly but not exclusively for an autonomous vacuum cleaner” (*id.* at 1:3–4). Bisset describes that autonomous vehicles generally have a plurality of sensors for detecting obstacles in the path of the vehicle to prevent collision or accidents. *Id.* at 1:6–7. Figure 1 of Bisset shows a perspective view of an automated vacuum cleaner.

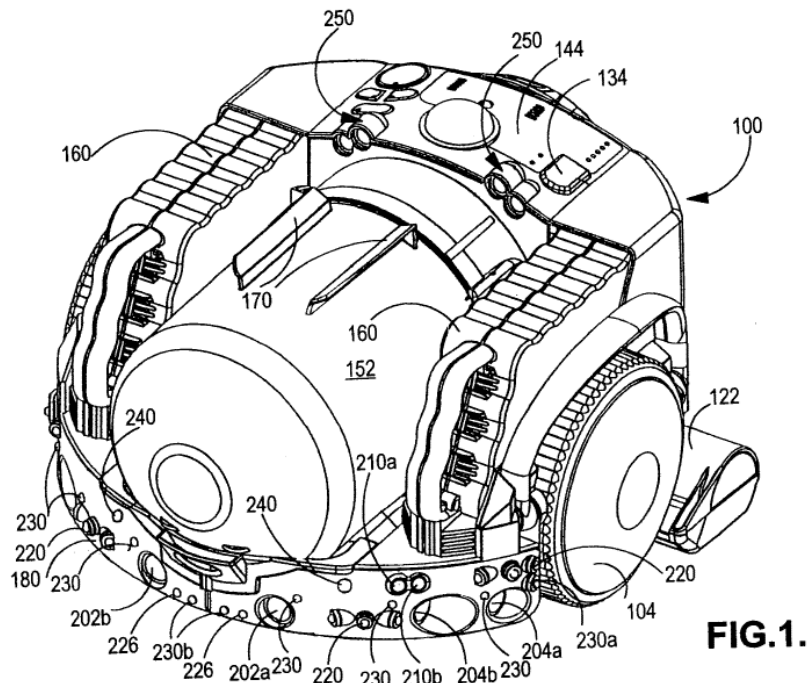


Figure 1 shows Bisset's vacuum cleaner 100, including cleaner head 122, cyclonic separator 152 for separating dirt and dust from the air drawn into the cleaner 100, battery packs 160, wheels 104, sensors 202a/b, 204a/b, and 210a/b. Ex. 1005 at 5:4–6:22.

2. Toyoda

Toyoda discloses a self-propelled cleaning robot, “with left and right side brushes for sweeping dirt in from a floor surface, and with a main brush on its main body center portion for taking swept-in dirt into a dust box.” Ex. 1007, code (54), ¶¶ 1, 5.

3. Ye

Ye, titled “Fully Automatic Cleaning Robot,” provides “a fully automatic cleaning robot that is under smart control by a computer; is capable of realizing timed start-up, cleaning, and vacuuming automatically; provides reminders and allows message-leaving; and can alternatively be controlled manually with an infrared remote control.” Ex. 1026, code

(54), 1. The robot comprises a vacuum cleaner, a walking apparatus configured to drive the movement of the vacuum cleaner, and an electric control portion. *Id.* at 1.

4. Patent Owner's arguments

Patent Owner argues that Petitioner fails to sufficiently justify modifying Bisset with either Toyoda or Ye. Prelim. Resp. 31–43. Patent Owner first argues that skilled artisans had no reason “to add a powered side brush to Bisset because Bisset already provides improved reach into corners and along edges through its asymmetric cleaning brush.” *Id.* at 34. Petitioner, however, explains that side brushes such as Toyoda and Ye teach have an improved ability to clean in corners as compared to Bisset’s brush. Pet. 14–17; *accord id.* at 20 (“The use of side brushes in combination with Bisset’s robot would have been nothing more than use of a known technique (using side brushes) to improve similar products (robot vacuums) in the same way (improved corner and edge cleaning)”). Petitioner further explains that Bisset’s asymmetric configuration, although able to clean the edge of a room, “would have been insufficient to effectively and efficiently clean into corners,” “limits the available navigation paths,” and that “the protrusion’s hard casing would limit the reach of Bisset’s bar brush.” *Id.* at 18–19 (citing Ex. 1003 ¶¶ 55–58). Thus, we do not agree that Bisset already had the same capabilities as the asserted combination. Moreover, even if Bisset had an existing capability, that would not undermine a reason to use an alternative structure from another reference—“the simple substitution of one known element for another.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007).

Patent Owner argues further that, even if a skilled artisan attempted to make the asserted combinations, it would “lead to critical failures in Bisset’s functionality.” Prelim. Resp. 35. According to Patent Owner, “the large size of the brushes/plates . . . would result in the brush/plate of Toyoda/Ye running into and interfering with the driving wheels of Bisset.” *Id.* Patent Owner does not support such an outcome with evidence other than a composite diagram of how it envisions the combinations. *See id.* at 34. We find Patent Owner’s argument implausible and at odds with the idea of a skilled artisan. *KSR*, 550 U.S. at 421 (“A person of ordinary skill is also a person of ordinary creativity, not an automaton.”). A skilled artisan adapting Bisset’s design to incorporate side brushes would configure the system to avoid interfering with Bisset’s driving wheels. That is not an issue for which Petitioner required a specific explanation. *See In re ICON Health and Fitness, Inc.*, 496 F.3d 1374, 1382 (Fed. Cir. 2007) (“[W]e do not ignore the modifications that one skilled in the art would make to a device borrowed from the prior art.”).

Patent Owner submits also that adding side brushes from Toyoda or Ye would block Bisset’s downward facing sensors. Prelim. Resp. 35–39. Patent Owner identifies two types of sensors—Bisset’s “wheel sensors” 274 and 276, and Bisset’s “side downlooking sensors” 278 and 280. *Id.* at 36–37. According to Patent Owner, blocking the sensors would “interfere[e] with Bisset’s ability to sense its surroundings to avoid an accident.” *Id.* at 38.

As to Bisset’s side “downlooking sensors” 278 and 280, we are not persuaded they are included in every disclosed embodiment. Bisset describes that its approach “can use” those sensors, not that they are a required element. *Id.* at 1:61–64. Indeed, the side sensors are not recited by Bisset’s

claim 1. *Id.* at 10:45–56. Thus, we do not consider what effect, if any, Petitioner’s proposed modification would have on Bisset’s side downlooking sensors 278 and 280.

In contrast, it appears that Bisset includes the “downward looking wheel sensors” as a fundamental element of its design. Ex. 1024, code (57) (“Downward looking wheel sensors sense the presence of a surface in front of the wheels.”), 1:46–47 (Summary of the Invention, reciting the same). Those sensors, however, are located “immediately in front of each of the driven wheels 104.” *Id.* at 7:55–57. Thus, to the extent a skilled artisan would adapt a side brush to avoid interfering with Bisset’s wheels (as we find above), the same exercise would include avoiding the Bisset’s wheel sensors and would not require much additional change (because those sensors are directly adjacent each wheel). Patent Owner characterizes Petitioner’s support for accommodating Bisset’s wheel sensors as conclusory. Prelim. Resp. 38–39 (citing Ex. 1003 ¶ 88). But, at this stage, Patent Owner offers no countervailing evidence beyond Bisset’s disclosures themselves. We do not find Bisset’s disclosures demonstrate that Petitioner’s proposed combination would render Bisset’s device inoperable.

Finally, Patent Owner argues that incorporating Toyoda’s or Ye’s side brushes would require adding a host of support structures to enable the brushes’ functionality. Prelim. Resp. 40–43. In Patent Owner’s view, Bisset’s already crowded structure would not readily accommodate such structures. *Id.* at 41. The argument resolves to asserting insufficient particularly—Patent Owner contends that Petitioner neither explains the necessary detail nor justifies foregoing that detail. *Id.* at 42. We do not agree. Patent Owner has not identified which limitation the combination fails to

teach or why Petitioner’s asserted rationale fails. We determine that the Petition sufficiently explains its asserted grounds, including reasons a skilled artisan would have made the asserted combinations. Thus, Petitioner has shown that it is reasonably likely to succeed with respect to unpatentability of claim 1 over Bisset and Toyoda or over Bisset and Ye.

D. ADDITIONAL GROUNDS

Petitioner asserts that the additional elements claims 14 and 36 were taught by Jones and that skilled artisan had reason to incorporate Jones’s teachings to the above combinations of Bisset and Toyoda or Ye to arrive at the claims. Pet. 76–82. Similarly, Petitioner asserts that the additional elements of claims 16 and 17 were taught by Horst and that skilled artisans had reason to incorporate Horst’s teachings to the above combinations of Bisset and Toyoda or Ye to arrive at the claims. *Id.* at 82–87.

Jones is a textbook about the “design and construction of mobile robots.” Ex. 1008, xix. Jones discloses building systems, including a microprocessor and software to manage a large number of sensors. *Id.* at 2.

Horst “relates to rotary sweepers and is particularly suitable for use in poultry sheds.” Ex. 1015, 1:2–3. Horst discloses “a rotary sweeper including a central web member, a plurality of arms extending radially from said member, bristles on each said arm arranged along the longitudinal axis of the latter; and means for imparting rotary drive to said web member.” *Id.* at 1:12–17.

Patent Owner does not challenge Petitioner’s contentions at this stage, arguing only that the additional grounds suffer from the same deficiencies as the Bisset–Toyoda and Bisset–Ye combinations. Prelim. Resp. 43. Because we do not agree with Patent Owner as to those asserted deficiencies, Patent

Owner has not identified a deficiency in the additional grounds either. We have reviewed the record and conclude that Petitioner has shown that it is reasonably likely to succeed with respect to unpatentability based on the additional grounds.

III. CONCLUSION

We conclude Petitioner has shown a reasonable likelihood of prevailing with respect to at least one claim. We have evaluated all of the parties' submissions and determine that the record supports institution.

Our determination at this stage of the proceeding is based on the evidentiary record currently before us. This decision to institute trial is not a final decision as to patentability of any claim for which *inter partes* review has been instituted. Our final decision will be based on the full record developed during trial.

IV. ORDER

Accordingly, it is

ORDERED that, pursuant to 35 U.S.C. § 314(a), *inter partes* review of claims 1, 8–12, 14, 16–19, 22–25, 32–34, 36, 37, 55, 56, and 62 is instituted on the grounds set forth in the Petition;

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

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Patent 7,571,511 B2

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