

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SHENZHEN SILVER STAR INTELLIGENT TECHNOLOGY CO., LTD.,
Petitioner,

v.

IROBOT CORP.,
Patent Owner.

Case IPR2018-00897
Patent 6,809,490 B2

Before WILLIAM V. SAINDON, TERRENCE W. McMILLIN, and
AMANDA F. WIEKER, *Administrative Patent Judges*.

SAINDON, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. §314(a)

I. INTRODUCTION

Shenzhen Silver Star Intelligent Technology Co., Ltd. (“Petitioner”) filed a Petition requesting an *inter partes* review of claims 1, 2–5, 7, 8, and 12 (“the challenged claims”) of U.S. Patent No. 6,809,490 B2 (Ex. 1001, “the ’490 patent”). Paper 3 (“Pet.”). iRobot Corp. (“Patent Owner”) filed a Preliminary Response. Paper 7 (“Prelim. Resp.”); *see also* Paper 8 (denying Petitioner’s request to file a Reply, for lack of good cause).

We have authority under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted unless the information presented in the Petition and the Preliminary 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; *see also* 37 C.F.R. § 42.4(a) (“The Board institutes the trial on behalf of the Director.”).

For the reasons that follow, we do not institute an *inter partes* review of any of the challenged claims of the ’490 patent.

A. Related Matters

The parties identify the following matters related to the ’233 patent (Pet. 1–2; Paper 4, 2–3):

In re Certain Robotic Vacuum Cleaning Devices And Components Thereof Such As Spare Parts, Inv. No. 337-TA-1057 (USITC);

iRobot Corporation v. Hoover, Inc., et al., Case No. 1:17-cv-10647 (D. Mass.);

iRobot Corporation v. The Black & Decker Corp., et al., Case No. 1:17-cv-10648 (D. Mass.);

iRobot Corporation v. Bissell Homecare, Inc., et al., Case No. 1:17-cv-10649 (D. Mass.);

iRobot Corporation v. Bobsweep, Inc., et al., Case No. 1:17-cv-10651 (D. Mass.);

iRobot Corp. v. Shenzhen Zhiyi Technology Co. Ltd., Case No. 1:17-cv-10652 (D. Mass.); and

Shenzhen Zhiyi Technology Co., Ltd. v. iRobot Corp., IPR2017-02061 (PTAB) (the “-2061 IPR”)

B. The '490 Patent

The '490 patent is directed to a mobile robot used, e.g., in vacuum cleaning or mowing. Ex. 1001, 1:9–12. A challenge in the prior art is designing an algorithm that allows the robot to cover all of an area of unknown geometry in an efficient amount of time. *Id.* at 1:22–2:19. The '490 patent discloses a robot that moves through various operational modes, including spot cleaning, edge cleaning, and room cleaning modes to effectively cover the area. *Id.* at 8:35–47. These high-level operating modes are, in turn, effected by the robot giving priority to various behaviors dictating how the robot reacts in various situations (e.g., hitting a wall). *Id.* at 8:48–9:5, 13:26–35.

C. Challenged Claim

Petitioner challenges claims 1, 2–5, 7, 8, 12, and 42 of the '490 patent. Independent claims 1 and 42 are reproduced below.

1. A mobile robot comprising:
 - (a) means for moving the robot over a surface;
 - (b) an obstacle detection sensor;
 - (c) and a control system operatively connected to said obstacle detection sensor and said means for moving;

- (d) said control system configured to operate the robot in a plurality of operational modes and to select from among the plurality of modes in real time in response to signals generated by the obstacle detection sensor, said plurality of operational modes comprising: a spot-coverage mode whereby the robot operates in an isolated area, an obstacle following mode whereby said robot travels adjacent to an obstacle, and a bounce mode whereby the robot travels substantially in a direction away from an obstacle after encountering the obstacle, and wherein, when in the obstacle following mode, the robot travels adjacent to an obstacle for a distance at least twice the work width of the robot.

42. A mobile robot comprising:

- (a) means for moving the robot over a surface;
(b) an obstacle detection sensor;
(c) a cliff sensor; and
(d) a control system operatively connected to said obstacle detection sensor, said cliff sensor, and said means for moving;
(e) said control system configured to operate the robot in a plurality of operational modes, said plurality of operational modes comprising: a spot-coverage mode whereby the robot operates in an isolated area, an obstacle following mode whereby said robot travels adjacent to an obstacle for a distance at least twice the work width of the robot, and a bounce mode whereby the robot travels substantially in a direction away from an obstacle after encountering the obstacle.

D. Prior Art and Asserted Grounds

Petitioner asserts that claims 1, 2–5, 7, 8, 12, and 42 would have been obvious on the following grounds:

Reference(s)	Claim(s) Challenged
Ueno ¹	1, 2–5, 7, 8, and 12

¹ Japanese Unexamined Patent App. Pub. H11-212642, pub. Aug. 6, 1999

Reference(s)	Claim(s) Challenged
Ueno and AAI Article ²	1, 2–5, 7, 8, and 12
Ueno and Kawagoe ³	1, 2–5, 7, 8, and 12
Ueno and Bisset ⁴	12
Ueno, AAI Article, and Bisset	12
Ueno, Kawagoe, and Bisset	12
Ueno and Erwin ⁵	12
Ueno, AAI Article, and Erwin	12
Ueno, Kawagoe, and Erwin	12
Ueno and Bottomley ⁶	42
Ueno, AAI Article, and Bottomley	42
Ueno, Kawagoe, and Bottomley	42
Ueno and Öhman ⁷	42
Ueno, AAI Article, and Öhman	42
Ueno, Kawagoe, and Öhman	42
Ueno and Bissett-612 ⁸	42
Bottomley and AAI Article	1 and 42

(certified translation) (Ex. 1007); *see also* Ex. 1014 (original Japanese).

² Keith L. Doty and Reid R. Harrison, “Sweep Strategies for a Sensory-Driven, Behavior-Based Vacuum Cleaning Agent,” AAI 1993 Fall Symposium Series Instantiating Real-World Agents (Oct. 22–24, 1993) (Ex. 1019).

³ U.S. Patent No. 6,574,536 B1, iss. June 3, 2003 (Ex. 1007).

⁴ WO 00/38025, pub. June 29, 2000 (Ex. 1010).

⁵ German Patent App. 19849978 A1, pub. May 11, 2000 (translated copy) (Ex. 1011); *see also* Ex. 1015 (original German).

⁶ WO 00/04430, pub. Jan. 27, 2000 (Ex. 1006).

⁷ WO 93/03399, pub. Feb. 18, 1993 (Ex. 1008).

⁸ U.S. Patent No. 6,493,612 B1, iss. Dec. 10, 2002 (Ex. 1026).

II. 35 U.S.C. § 314(a) ANALYSIS

For the reasons that follow, we exercise our discretion to deny institution under 35 U.S.C. § 314(a).

A. Legal Framework

35 U.S.C. § 314(a) provides that:

The Director [of the USPTO] may not authorize an *inter partes* review to be instituted unless the Director determines that the information presented in the petition filed under section 311 and any response filed under section 313 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.

Section 314(a) does not require the Director to institute an *inter partes* review. *See Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (“[T]he PTO is permitted, but never compelled, to institute an IPR proceeding.”). Rather, a decision whether to institute is within the Director’s discretion, and that discretion has been delegated to the Board. *See* 37 C.F.R. § 42.4(a); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016) (“[T]he agency’s decision to deny a petition is a matter committed to the Patent Office’s discretion.”).

In a precedential decision in *General Plastic Industries Co., Ltd. v. Canon Kabushiki Kaisha*, Case IPR2017-01357, the Board articulated a non-exhaustive list of factors to be considered in evaluating whether to exercise discretion, under 35 U.S.C. § 314(a), to deny a petition that challenges a patent that was previously challenged before the Board. These factors are:

1. whether the same petitioner previously filed a petition directed to the same claims of the same patent;
2. whether at the time of filing of the first petition the petitioner knew of the prior art asserted in the second petition or should have known of it;

3. whether at the time of filing of the second petition the petitioner already received the patent owner's preliminary response to the first petition or received the Board's decision on whether to institute review in the first petition;
4. the length of time that elapsed between the time the petitioner learned of the prior art asserted in the second petition and the filing of the second petition;
5. whether the petitioner provides adequate explanation for the time elapsed between the filings of multiple petitions directed to the same claims of the same patent;
6. the finite resources of the Board; and
7. the requirement under 35 U.S.C. § 316(a)(11) to issue a final determination not later than 1 year after the date on which the Director notices institution of review.

Gen. Plastic, slip op. at 16 (citing *NVIDIA Corp. v. Samsung Elec. Co.*, Case IPR2016-00134 (PTAB May 4, 2016) (Paper 9)). These factors are “a non-exhaustive list” and “additional factors may arise in other cases for consideration, where appropriate.” *Id.* at 7, 8. With that in mind, we weigh an additional factor:

8. the extent to which the petitioner and any prior petitioner(s) were similarly situated defendants or otherwise realized a similar-in-time hazard regarding the challenged patent.

Shenzhen Silver Star Intelligent Technology Co., Ltd. v. iRobot Corp., IPR2018-00761, Paper 15, 18 (PTAB Sept. 5, 2018) (Saindon, concurring).

B. Application of the General Plastic Factors

Patent Owner has provided an extensive analysis of how the *General Plastic* factors apply to this proceeding. Prelim. Resp. 4–23. Petitioner does not address *General Plastic* or otherwise discuss the fact that the '490 patent

was recently challenged by another entity.⁹

In general, the following timeline of events is relevant to our discussion. On April 18, 2017, Patent Owner filed a complaint with the International Trade Commission (ITC) proposing as respondents, *inter alia*, Shenzhen ZhiYi Technology Co., Ltd. d/b/a/ iLife (“iLife”) and Petitioner, Shenhzen Silver Star Intelligent Technology Co., Ltd. Ex. 2012, 6. iLife filed a petition requesting *inter partes* review of claims 1–3, 7, 12, and 42 of the ’490 patent on September 6, 2017, in the -2061 IPR. Ex. 2005. Patent Owner filed a preliminary response in that proceeding on December 14, 2017, and we issued a decision instituting *inter partes* review on March 12, 2018. See Exs. 2006, 2007. The instant Petition was filed April 16, 2018.

Factor 1

The first *General Plastic* factor asks “whether the same petitioner previously filed a petition directed to the same claims of the same patent.” *Gen. Plastic*, slip op. at 16. Factor 1 favors Petitioner because Petitioner has not filed previously a petition directed to the same claims of the same patent. Patent Owner acknowledges that Factor 1 “might be said to favor Petitioner,” and attempts to make its case on the basis of the other Factors. Prelim. Resp. 9.

⁹ After Patent Owner filed its Preliminary Response, Petitioner sought to file a reply brief addressing *General Plastic*. See Paper 8. However, as we explained during a conference call, “Petitioner’s failure to foresee the applicability of § 314(a) does not demonstrate good cause [to file a reply brief]” because “Petitioner should have been aware that []§ 314(a) . . . [would] be at issue.” *Id.* at 4; see also 37 C.F.R. § 42.108(c) (“A petitioner may seek leave to file a reply to the preliminary response Any such request must make a showing of good cause.”).

Factor 2

The second *General Plastic* factor asks “whether at the time of filing of the first petition the petitioner knew of the prior art asserted in the second petition or should have known of it.” *Gen. Plastic*, slip op. at 16. Factor 2 favors Patent Owner because at the time iLife filed its petition, Petitioner knew or should have known of the prior art asserted in its Petition. In particular, Petitioner and iLife both submitted invalidity contentions in the ITC proceeding effectively identifying all of the prior art asserted in this proceeding on September 29, 2017, over 6 months prior to Petitioner filing the Petition on April 16, 2018. See Ex. 2009, 4, 8, 13, 15, 17–19, 23, 25. Petitioner knew about the prior art asserted in this proceeding at the time the iLife petition was submitted and thus had apparent opportunity to file this Petition at a time on par with the iLife petition. Petitioner offers no explanation for why it waited until after Patent Owner filed its Preliminary Response and we issued our Decision on Institution in that proceeding. Accordingly, Factor 2 favors Patent Owner.

Factor 3

The third *General Plastic* factor asks “whether at the time of filing of the second petition the petitioner already received the patent owner’s preliminary response to the first petition or received the Board’s decision on whether to institute review in the first petition.” *Gen. Plastic*, slip op. at 16. Factor 3 favors Patent Owner because, as outlined in our timeline above, Petitioner had about 4 months to review and adjust the Petition (filed April 16, 2018) in light of Patent Owner’s preliminary response to iLife’s petition (filed December 14, 2017). Similarly, Petitioner filed its Petition one month after we issued our Decision on Institution of the iLife petition (March 12,

2018). Although these intervals may not be enough time to completely revamp a theory of unpatentability, it is certainly enough time to hone existing arguments in light of Patent Owner’s preliminary response and our Decision on Institution.¹⁰ Petitioner offers no explanation for why it waited so long. Thus, Factor 3 favors Patent Owner.

Factor 4

The fourth *General Plastic* factor considers “the length of time that elapsed between the time the petitioner learned of the prior art asserted in the second petition and the filing of the second petition.” *Gen. Plastic*, slip op. at 16. Factor 4 favors Patent Owner because, as evident from our timeline above, Petitioner’s invalidity contentions filed with the ITC on September 29, 2017 identified effectively each prior art reference in this Petition, which was filed on April 16, 2018, a little over 6 months later. Thus, Petitioner had the same theory of unpatentability fleshed out but waited until after a ruling on iLife’s petition, without an explanation for why it waited so long. Thus, Factor 4 favors Patent Owner.

Factor 5

The fifth *General Plastic* factor asks “whether the petitioner provides adequate explanation for the time elapsed between the filings of multiple petitions directed to the same claims of the same patent.” *Gen. Plastic*, slip op. at 16. Although a separate Factor, we largely addressed the lack of adequate explanation in our treatment of the other Factors. Factor 5 favors Patent Owner because Petitioner has not provided any explanation for the

¹⁰ Indeed, Patent Owner argues that Petitioner in fact modified its earlier ITC positions in light of these papers. Prelim. Resp. 13–14. We take no position on that argument.

time elapsed between the filings of multiple petitions directed to the same claims of the same patent. See Paper 8.

Factors 6 and 7

The sixth *General Plastic* factor considers “the finite resources of the Board.” *Gen. Plastic*, slip op. at 16. The seventh *General Plastic* factor considers “the requirement . . . to issue a final determination not later than 1 year after the date on which the Director notices institution of review.” *Id.* Patent Owner argues that Petitioner raises 17 “overlapping and redundant grounds.” Prelim. Resp. 18–19. Indeed, there are 9 grounds asserted against claim 12 and 8 grounds asserted against claim 42. Petitioner offers no explanation for why so many grounds should be considered.

Post-SAS,¹¹ Factors 6 and 7 are viewed in a new light, as the option of partial institution is no longer a tool for panels of the Board to manage the size of a trial. Factors 6 and 7 induce the Board to consider passing on a potentially meritorious petition in order to police the general behavior of petitioners as a whole; they permit a panel to conclude that a given petition (assuming no mitigating circumstances) may present too many challenges to be considered on the merits. Not all challenges represent equal taxes on Board resources, however, so this will necessarily be a case-specific inquiry not amenable to bright line rules. Notwithstanding, given the strength of the other Factors towards denial, we do not find it necessary to determine whether this case presents a fact pattern where the number of grounds asserted against the same claims would result in enough of a strain on Board

¹¹ *SAS Institute Inc. v. Iancu*, 584 U.S. ___, 138 S. Ct. 1348 (2018) (requiring the agency to decide patentability on all claims raised in a petition).

resources to merit consideration towards denial, and leave that issue open for another case. Accordingly, we do not make a determination on Factors 6 and 7.

Proposed Factor 8

We adopt the eighth factor considered in a prior *Shenzhen Silver Star* case, “the extent to which the petitioner and any prior petitioner(s) were similarly situated defendants or otherwise realized a similar-in-time hazard regarding the challenged patent.” *Shenzhen Silver Star*, IPR2018-00761, Paper 15, 18 (Saindon, concurring); *see also id.* at 16–19 (explaining the reasons for proposed adoption of the factor). The purpose of proposed Factor 8 is to discourage tactical filing of petitions over time by parties that faced the same litigation threat at the same time.¹² Factor 8 favors Patent Owner because Petitioner and iLife were co-respondents in the ITC litigation and filed their invalidity contentions at the same time. *See generally* Ex. 2009. Accordingly, Petitioner and iLife both faced a similar-in-time hazard regarding the ’490 patent, yet Petitioner waited until after our Decision on Institution on iLife’s petition to file this Petition. Absent mitigating explanation, of which we have none, this suggests an attempt to

¹² As acknowledged and explained in more detail in IPR2018-00761, proposed Factor 8 does not preclude non-tactical filing situations, where a later-filing petitioner files later due to circumstances outside that petitioner’s control, for example, having been charged with infringement later in time, a change in the nature of the infringement charge (e.g., claims identified for the first time), availability of key personnel required for preparation of the petition, or unusually early filing of the earlier-filing petitioner. *See Shenzhen Silver Star*, IPR2018-00761, Paper 15, 18–19 (Saindon, concurring) (“There are legitimate reasons why a petition may be filed after [a preliminary response or a decision on institution].”).

secure tactical advantage by waiting for iLife to file a “test case.” Factor 8 weighs against tactical filing of petitions. Thus, proposed Factor 8 favors Patent Owner.

C. Conclusion Regarding General Plastic Factors

Factor 1 favors Petitioner, Factors 2–5 and 8 favor Patent Owner, Factors 3 and 4 strongly favor Patent Owner, and proposed Factor 8 overwhelmingly favors Patent Owner, all for the reasons explained above. Petitioner has effectively no mitigating explanation. The story our analysis of these Factors tells indicates that it is appropriate to exercise our discretion under 35 U.S.C. § 314(a) to deny institution.

III. ORDER

In view of the foregoing, it is hereby:

ORDERED that we exercise a discretionary denial of *inter partes* review of the ’490 patent under 35 U.S.C. § 314(a), and that no trial is instituted.

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Patent 6,809,490 B2

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