

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FOX FACTORY, INC.,
Petitioner,

v.

SRAM, LLC,
Patent Owner.

IPR2024-00492
Patent 7,147,207 B2

Before MEREDITH C. PETRAVICK, HYUN J. JUNG, and
KEVIN W. CHERRY, *Administrative Patent Judges*.

JUNG, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. *Background and Summary*

FOX Factory, Inc. (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting institution of an *inter partes* review of claims 1–3, 7, 8, and 10–12 of U.S. Patent No. 7,147,207 B2 (Ex. 1001, “the ’207 patent”). SRAM, LLC (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). With our authorization, Petitioner filed a Reply to Patent Owner’s Preliminary Response (Paper 7, “Prelim. Reply”), and Patent Owner filed a Sur-Reply (Paper 9, “Prelim. Sur-reply”).

Under 35 U.S.C. § 314, an *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” Upon consideration of the Petition and for the reasons explained below, we determine that Petitioner has shown a reasonable likelihood of prevailing with respect to at least one of the challenged claims.

Thus, we institute an *inter partes* review of claims 1–3, 7, 8, and 10–12 of the ’207 patent on all presented challenges. 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.”); *see also SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018).

B. *Real Parties in Interest*

Petitioner identifies FOX Factory, Inc. and FOX Factory Holding Corp. as real parties in interest. Pet. 102. Patent Owner identifies itself as the real party in interest. Paper 4, 2.

C. Related Matters

The parties identify *SRAM, LLC v. FOX Factory, Inc.*, 1:23-cv-00492 (N.D. Ga.) as a related matter. Pet. 103; Paper 4, 2. Patent Owner also identifies IPR2024-00491. *Id.*

D. The '207 Patent (Ex. 1001)

The '207 patent issued on December 12, 2006 from an application filed on November 4, 2004. Ex. 1001, codes (22), (45).

The '207 patent relates “particularly to an actuator apparatus for controlling a valve mechanism of a suspension system that includes a valve actuating assembly operable between at least two rider-selectable positions and an adjuster assembly for adjusting the damping characteristics of at least one of the rider-selectable positions.” Ex. 1001, 1:7–13. Figure 1 of the '207 patent is below reproduced.

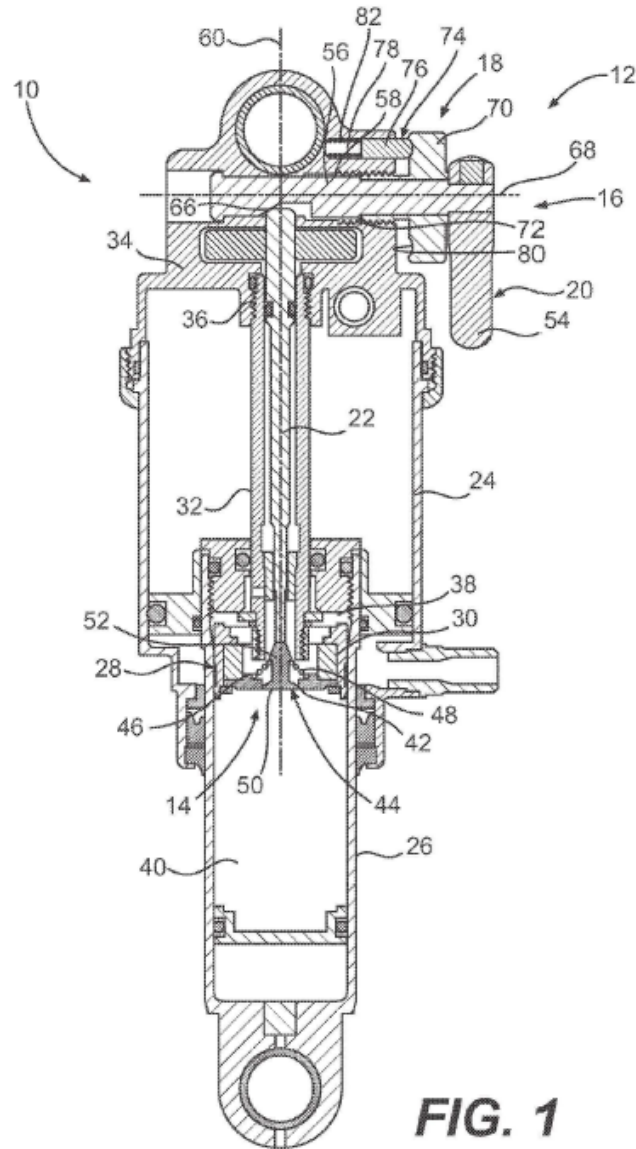


FIG. 1

Figure 1 shows a “cross-sectional view of the suspension system.”
Ex. 1001, 3:13–14. Suspension system 10 includes first and second
cylinders 24, 26, and second cylinder 26 encloses piston assembly 28 that
has piston 30 and hollow piston rod 32. *Id.* at 3:63–4:1. Piston 30 divides
second cylinder 26 into first and second fluid chambers 38, 40, and has fluid
passageway 42 that allows fluid to pass between chambers 38, 40 to affect
damping. *Id.* at 4:4–9.

Valve mechanism 14, also enclosed by second cylinder 26, controls fluid flow between chambers 38, 40 and includes valve 44 and valve seat 46. Ex. 1001, 4:10–13. Driver 22 extends through and is displaceable relative to hollow piston rod 32 to engage valve stem 52 of valve 44. *Id.* at 4:19–22.

Suspension system 10 also includes actuator apparatus 12 to control valve mechanism 14. Ex. 1001, 3:42–43. Actuator apparatus 12 includes valve actuating assembly 16 and adjuster assembly 18 operatively connected to valve actuating assembly 16. *Id.* at 3:45–50. Valve actuating assembly 16 is “operable between at least two rider-selectable positions to adjust the valve mechanism 14 between various suspension settings.” *Id.* at 3:45–48. Adjuster assembly 18 can “adjust the damping characteristics corresponding to at least one of the positions of the valve actuating assembly 16 independently of the damping characteristics corresponding to another position of the valve actuating assembly 16.” *Id.* at 3:48–53.

Rider-operated lever 52 is rigidly connected to camshaft 56 that is within opening 58 of first cylinder 24 and engageable with driver 22 to displace driver 22 axially. Ex. 1001, 4:23–26. Three cam surfaces 62, 64, 66 engage with driver 22 and correspond to three rider-selectable positions. *Id.* at 4:27–30, Figs. 2, 3. Adjuster assembly 18 also includes knob 70 threaded into opening 58, and knob 70 can be threaded in and out of opening 58 to displace camshaft 56 along its axis. *Id.* at 4:41–44. Knob 70 at its minimum and maximum thread engagement causes driver 22 to engage cam surface 66 at its lowest and highest points, respectively. *Id.* at 5:3–9, Figs. 4a, 4b. Rotating knob 70 between these extremes provides various positions of driver 22 and resulting in various damping characteristics. *Id.* at 5:9–13.

E. Illustrative Claim

The '207 patent includes 12 claims, of which Petitioner challenges claims 1–3, 7, 8, and 10– 12. Of the challenged claims, claim 1, reproduced below, is independent.

1. An actuator apparatus for controlling a valve mechanism of a suspension system, the actuator apparatus comprising:

a valve actuating assembly operatively connected to the valve mechanism, the valve actuating assembly including a camshaft rotatable between at least two positions to adjust the valve mechanism between various suspension settings; and

an adjuster assembly operatively connected to the valve actuating assembly for adjusting the damping characteristics corresponding to at least one of the positions of the valve actuating assembly independently of the damping characteristics corresponding to another position of the valve actuating assembly.

Ex. 1001, 8:44–58.

F. Asserted Prior Art and Proffered Testimonial Evidence

Petitioner identifies the following references as prior art in the asserted grounds of unpatentability:

Name	Reference	Exhibit
Nagai	US 5,597,054, issued Jan. 28, 1997	1008
Fox	US 6,360,857 B1, issued Mar. 26, 2002	1005
Yi	US 6,491,146 B1, issued Dec. 10, 2002	1006
JP'279	JP 2516279, published Nov. 6, 1996	1007

Petitioner contends that the asserted references are prior art under § 102(b).¹ Pet. 8–9. Petitioner also provides a Declaration of Alexander Slocum Ph.D. (Ex. 1004).

¹ The relevant sections of the Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284 (Sept. 16, 2011), took effect on March 16,

G. Asserted Grounds

Petitioner asserts that claims 1–3, 7, 8, and 10– 12 are unpatentable on the following grounds:

Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1–3, 7, 8, 10– 12	102(b)	Fox
1–3, 7, 8, 10– 12	103(a)	Fox, JP’279, Nagai
1–3, 7, 8, 10– 12	103(a)	Yi, JP’279, Nagai

Pet. 2.

II. 35 U.S.C. § 314(a)

As noted above in Section I.C., the parties identify a related matter in the U.S. district court for the Northern District of Georgia. Pet. 103; Paper 4, 2. Petitioner argues that discretionary denial under *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv*”) is not warranted. Pet. 100–101; Prelim. Reply 1–10. Patent Owner responds that all the factors favor denying institution. Prelim. Resp. 39–48; Prelim. Sur-reply 1–10.

Fintiv instructs us to consider whether to deny institution in certain circumstances when there is parallel district court litigation, upon consideration of six factors:

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision;

2013. Because the ’207 patent issued from an application filed before that date, our citations to 35 U.S.C. §§ 102 and 103 in this Decision are to their pre-AIA versions. *See also* Pet. 8 n.2 (“All cites in this Petition to §§ 102 and 103 are to pre-AIA §§ 102 and 103.”).

3. investment in the parallel proceeding by the court and the parties;

4. overlap between issues raised in the petition and in the parallel proceeding;

5. whether the petitioner and the defendant in the parallel proceeding are the same party; and

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

Fintiv, Paper 11 at 6.

Our analysis of *Fintiv* is guided by the USPTO Director's Memorandum issued on June 21, 2022, titled "Interim Procedure for Discretionary Denials in AIA Post Grant Proceedings with Parallel District Court Litigation" ("Director's Memo"). We turn to the *Fintiv* factors.

A. Factor 1: Stay

According to the parties, a stay was granted in related litigation while a motion to transfer was being considered and then lifted when that motion was denied. Pet. 100; Prelim. Resp. 40–42; Prelim. Reply 1–2. "Petitioner intends to request [another] stay if the Board institutes this IPR" because a stay would simplify the issues and improve efficiency in the related litigation. Prelim. Reply 1. Patent Owner argues that a second stay is unlikely to be granted. Prelim. Sur-reply 3. Petitioner replies that Patent Owner's argument is pure speculation and there no evidence that the related litigation will not be stayed again upon instituting this proceeding. Prelim. Reply 1–3.

Because the related litigation is not stayed and there is insufficient evidence that a stay may or may not be granted if trial is instituted, this factor is neutral.

B. Factor 2: Proximity to Trial Date

Petitioner argues that “there is no trial date scheduled.” Pet. 100; *see also* Prelim. Reply 3 (“No trial date has been set.”). Patent Owner agrees that “a trial date has not yet been set.” Prelim. Resp. 42. The parties dispute what the statistical time to trial should be and how to apply it in view of the stay that has been lifted in related litigation. Prelim. Resp. 42–44; Prelim. Reply 3–5; Prelim. Sur-reply 4–6.

Because no trial date has been set, this factor weighs heavily against exercising our discretion to deny institution.

C. Factor 3: Investment in Parallel Proceeding

Petitioner argues that “parties and the district court have made very little progress and investment in the case since its filing on February 1, 2023,” and that “[t]he parties have only exchanged preliminary infringement and invalidity contentions.” Pet. 100. Petitioner also argues that “[t]here has been no meaningful production of documents, or responses to document requests or interrogatories,” and “[c]laim construction has not started.” *Id.* at 101.

Patent Owner argues that “well over 6,000 pages of documents have been exchanged between the parties, preliminary infringement contentions, responses thereto, and preliminary invalidity contentions have all been served, and multiple sets of Interrogatories and Requests for Production have been served.” Prelim. Resp. 44. Patent Owner also argues that Petitioner filed the present Petition “on the day of its statutory deadline.” *Id.*

Petitioner replies that “parties have resumed fact discovery, but thus far no depositions of fact witnesses have been taken (and none are scheduled)” and “are still in the midst of negotiating a case schedule, and claim construction has not yet started.” Prelim. Reply 5 (citing Ex. 1015).

Petitioner also replies that it did not “gain any tactical advantage by delaying filing.” *Id.* at 6.

In view of the minimal investment made by the parties and the court in parallel litigation, this factor also weighs against exercising our discretion to deny institution.

D. Factor 4: Overlap with Parallel Proceeding

Petitioner states that “there is some overlap in art and arguments between the invalidity contentions in the district court and the Petition (factor 4).” Pet. 101. Patent Owner argues that “there is significant overlap between the prior art and arguments asserted” in related litigation and this proceeding, and that “Petitioner has *not* stipulated that it will not pursue in the [related litigation] the same grounds asserted in the petition or any grounds that could have reasonably been raised in the petition.” Prelim. Resp. 46; *see also* Prelim. Sur-reply 6–7 (arguing similarly). This factor favors exercising our discretion to deny institution.

E. Factor 5: Whether Petitioner and Defendant are the Same Party

Both parties agree that Petitioner and defendant in related litigation are the same. Pet. 101; Prelim. Resp. 47. This factor favors exercising our discretion to deny institution.

F. Factor 6: Merits and Other Considerations

Petitioner argues that it “has presented compelling, meritorious challenges.” Pet. 101; *see also* Prelim. Reply 7–10 (arguing similarly). Patent Owner argues that Petitioner presents “weak grounds that lack many essential limitations.” Prelim. Resp. 48; *see also* Prelim. Sur-reply 7–10 (arguing similarly).

As specified in the Director’s Memo, “compelling, meritorious challenges will be allowed to proceed at the PTAB even where district court

litigation is proceeding in parallel,” and that the *Fintiv* analysis will not lead to discretionary denial if it can be established that a case presents compelling merits. Director’s Memo 4–5. Additionally, the Director clarified that “[t]he Board should first assess *Fintiv* factors 1–5; if that analysis supports discretionary denial, the Board should engage the compelling merits question.” *CommScope Techs. LLC v. Dali Wireless, Inc.*, IPR2022-01242, Paper 23 at 6 (PTAB Feb. 27, 2023) (precedential).

Because there is no trial date set and the minimal investment by the parties and the court in parallel litigation, we determine that, on balance, *Fintiv* factors 1–5 do not favor exercising our discretion to deny institution. Therefore, there is no need to determine whether the Petition establishes compelling merits.

G. Conclusion on Fintiv Factors

Based on a holistic analysis of the *Fintiv* factors taking into consideration “whether efficiency and integrity of the system are best served by denying or instituting review” (*Fintiv*, Paper 11 at 6), we decline to exercise our discretion under 35 U.S.C. § 314(a) to deny institution of *inter partes* review.

III. ANALYSIS

A. Legal Standards

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent [claim] it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016). This burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). The Board may authorize an *inter partes* review if we

determine that the information presented in the Petition shows that there is a reasonable likelihood that Petitioner will prevail with respect to at least one of the claims challenged in the petition. 35 U.S.C. § 314(a).

Petitioner contends that the challenged claims of the '207 patent are unpatentable under §§ 102 and 103. Pet. 2. A claim is anticipated under § 102(b) “only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987).

A claim is unpatentable under § 103 if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). When evaluating a combination of teachings, we must also “determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Whether a combination of elements produces a predictable result weighs in the ultimate determination of obviousness. *Id.* at 416–417.

B. Level of Ordinary Skill in the Art

Petitioner argues that a person of ordinary skill in the art

would have had (1) a Bachelor's degree in Mechanical Engineering or an equivalent degree, and 1–2 years of experience in design work related to bicycle technology suspension technology; or (2) at least a Master's degree in Mechanical Engineering or an equivalent degree with a focus on design of mechanical elements, and a good understanding of mechanical design principles.

Pet. 9–10 (citing Ex. 1003 ¶ 23).

Patent Owner responds that one of ordinary skill in the art would have been “more appropriately connected to, and consider[ed] the particularities of, vehicle suspension designs.” Prelim. Resp. 16. According to Patent Owner, the ordinarily skilled artisan would have had “a degree in Mechanical Engineering and approximately three years’ experience in vehicle suspension technology, or a Master’s degree or higher in Mechanical Engineering with a concentration in design of vehicle suspension technology or like technology.” *Id.* Patent Owner argues that Petitioner’s declarant “does not appear to meet” its proposed level of ordinary skill. *Id.*

Both parties’ proposal for the level of ordinary skill in the art are substantially the same. *See* Pet. 9–10; Prelim. Resp. 16. For example, both parties agree that an ordinarily skilled artisan would have, at least, a Bachelor’s degree in Mechanical Engineering with experience in bicycle or vehicle suspension design “or like technology.” *See* Pet. 9–10; Prelim. Resp. 16. At this stage, any differences in the parties’ proposals do not affect our analysis.

Also, Petitioner’s declarant has a Ph.D. in Mechanical Engineering with “over 30 years of experience in teaching and directing research related to mechanical engineering and precision machine design.” Ex. 1003 ¶ 4. At this stage, “precision machine design” is sufficiently “like technology,” as proposed by Patent Owner. Prelim. Resp. 16; Ex. 1003 ¶ 4; *see also id.* ¶ 10

(testifying that he is “very familiar with bicycle design and maintenance”). Therefore, we do not agree that Petitioner’s declarant has experience so “generalist” that it would affect the weight we give to his opinion.

Accordingly, based on the preliminary record, we adopt Petitioner’s asserted level of ordinary skill only to determine whether there is a reasonable likelihood that Petitioner would prevail with respect to at least one of the claims challenged in the Petition.

C. Claim Construction

In an *inter partes* review, the claims are construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. [§] 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.

37 C.F.R. § 42.100(b) (2021); *see Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc).

Petitioner states that “[n]o terms need construction to resolve the controversy in this forum.” Pet. 8 (citing Ex. 1003 ¶ 32). Patent Owner agrees. Prelim. Resp. 16.

At this preliminary stage, we determine that express claim interpretation is not necessary to determine whether Petitioner shows a reasonable likelihood of prevailing. *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.’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

D. Asserted Anticipation by Fox

1. *Fox (Ex. 1005)*

Fox “is directed to a shock absorber which uses an adjustment component such as a damping adjuster rod, or shaft.” Ex. 1005, 5:8–9. Figure 5 of Fox is below reproduced.

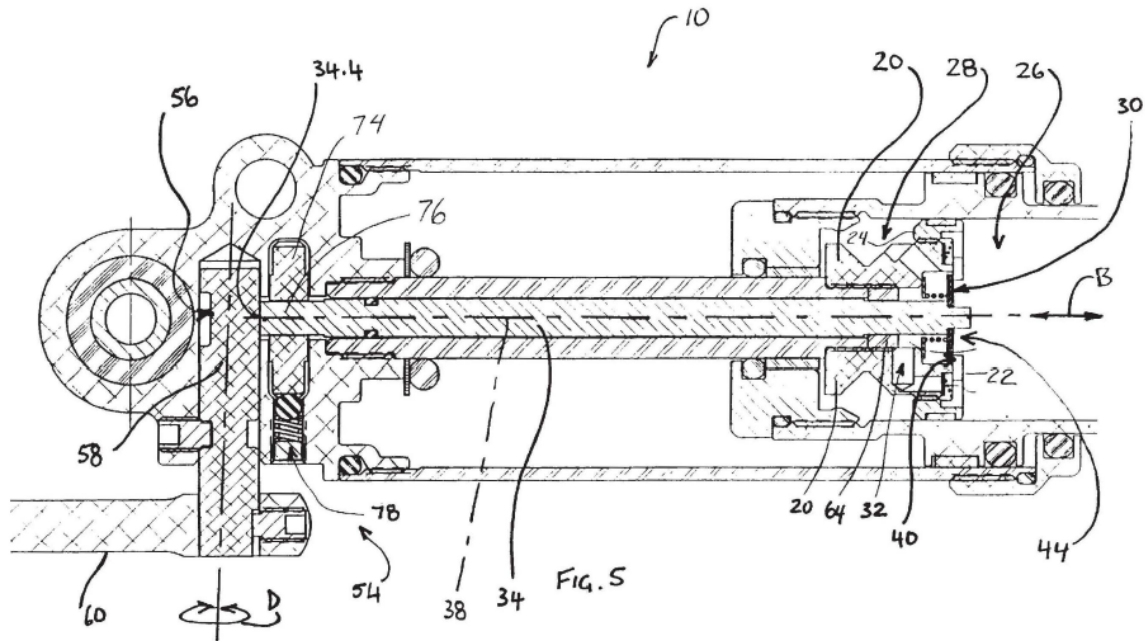


Figure 5 shows a sectional view of part of a shock absorber in an extended condition. Ex. 1005, 4:49–51. Shock absorber 10 includes first and second parts 12, 14. First part 12 has cylinder 16, and second part 14 has piston 20 that divides the interior of cylinder 16 into first and second chambers 26, 28. *Id.* at 6:36–40, 6:45–48, 6:51–54. A suitable fluid in first and second chambers 26, 28 is in fluid flow communication through passages 30, 32. *Id.* at 6:59–62.

An adjustment component, such as elongate shaft 34 can be mounted to second part 14. Ex. 1005, 6:65–7:3. When shaft 34 is adjusted, fluid flow

resistance through passage 30 from first chamber 26 to second chamber 30 is adjusted. *Id.* at 7:8–11, 7:28–41, 7:61–8:2.

Shock absorber 10 also includes an actuator arrangement 54 operatively connected to shaft 34 to axially displace shaft 34. Ex. 1005, 8:3–8. Actuator arrangement 54 has cam 56 arranged to cooperate with shaft 34 to displace it along its longitudinal axis 38. *Id.* at 8:8–10. Actuator arrangement 54 also has shaft 58 connected to cam 56 and lever 60 connected to actuation shaft 58 to angularly displace shaft 58. *Id.* at 8:12–13, 8:21–24. “Accordingly, shaft 34 acts as a damper adjuster,” and “actuator arrangement 54 acts as a damping adjuster driver.” *Id.* at 8:30–34.

2. Independent Claim 1

Petitioner argues that, to the extent the preamble is limiting, Fox’s shock absorber 10 discloses a suspension system, Fox’s actuator arrangement 54 and shaft 34 disclose an actuator apparatus and Fox’s restriction component 44 discloses a valve mechanism. Pet. 12–13 (citing Ex. 1003 ¶ 48; Ex. 1005, 6:36–38, 6:65–7:27, 8:3–30, Fig. 4).

Petitioner also argues that Fox’s shaft 34 and actuator arrangement 54 comprised of camshaft 58 and lever 60 disclose “a valve actuating assembly.” Pet. 13–14 (citing Ex. 1003 ¶ 49; Ex. 1005, 8:3–34, Fig. 5). Petitioner further argues that rotating camshaft 58 moves shaft 34 which, in turn, varies fluid flow resistance, and so that the asserted “valve actuating assembly” is “operatively connected to the valve mechanism.” *Id.* at 14 (citing Ex. 1003 ¶ 50; Ex. 1005, 7:8–11, 7:28–41, 7:61–8:2, 9:59–10:14). According to Petitioner, camshaft 58 is rotatable between open and closed/lockout compression damping settings, and thus, discloses “the valve actuating assembly including a camshaft rotatable between at least two positions to adjust the valve mechanism between various suspension

settings.” *Id.* at 14–16 (citing Ex. 1003 ¶¶ 51, 52; Ex. 1005, 6:11–16, 6:22–30, 7:52–8:2, 8:9–22, 8:31–34, 9:59–10:14, 11:33–39, Fig. 5).

For “an adjuster assembly operatively connected to the valve actuating assembly for adjusting the damping characteristics corresponding to at least one of the positions of the valve actuating assembly,” Petitioner argues that Fox discloses that its actuator 54 finely adjusts the damping characteristics of the open position of the asserted “valve actuating assembly.” Pet. 16 (citing Ex. 1003 ¶ 53). Petitioner also argues that, even though “valve actuating assembly” and “adjuster assembly” are separately recited, the presumption of structural distinctness is overcome because the ’207 patent describes that the “adjuster assembly” can be integrated with the “valve actuating assembly.” *Id.* at 16–18 (citing Ex. 1001, 3:53–57, 5:52–53, Figs. 7a–7c, claim 6; Ex. 1003 ¶¶ 30, 54).

Regarding the “adjuster assembly . . . adjusting the damping characteristics corresponding to at least one of the positions of the valve actuating assembly independently of the damping characteristics corresponding to another position of the valve actuating assembly,” Petitioner contends that, because Fox’s actuator 54 varies the damping characteristics in the open position, it can adjust damping in that open position independently of the damping characteristics of the closed/lockout position. Pet. 18–19 (citing Ex. 1003 ¶ 55; Ex. 1005, 5:47–53, 7:61–8:30, 11:11–15, 13:14–18); *see also id.* at 10–12 (arguing that Fox discloses an adjuster assembly).

a) Patent Owner’s Preliminary Response

Patent Owner responds that Fox does not disclose “an adjuster assembly . . . for adjusting the damping characteristics corresponding to at least one of the positions of the valve actuating assembly independently of

the damping characteristics corresponding to another position of the valve actuating assembly.” Prelim. Resp. 17, 21. According to Patent Owner, Fox fails to disclose “an actuator apparatus for controlling a valve mechanism of a suspension system having *at least one position* of the valve actuating assembly (e.g., lever) *that always provides the same damping characteristics, while another position has an adjustable set of damping characteristics*, adjusted via an adjuster assembly.” *Id.*

In Patent Owner’s view, “Fox must change the particular position of the valve actuating assembly to adjust the damping characteristics,” and Petitioner admits that “Fox’s adjuster assembly **54 must be rotated to different positions** in order to adjust the damping characteristics,” which is a flaw the ’207 patent overcomes. Prelim. Resp. 18–19 (citing Pet. 18–19; Ex. 1001, 1:30–43). Patent Owner argues that “*Fox has no way to vary the damping characteristics of any given position of the actuation shaft 58*” and “has no such adjuster assembly and no other means of providing a change in damping characteristics for a given position of the valve actuating assembly.” *Id.* at 19.

Patent Owner also responds that Petitioner reads “positions” too broadly and inconsistently with the purpose and disclosure of the ’207 patent. Prelim. Resp. 19–21 (citing Ex. 1001, 4:51–66, Figs. 2, 3). Patent Owner explains that selector 20 or lever 54 corresponds to distinct axial positions of camshaft 56. *Id.* at 20–21 (citing Ex. 1001, 4:51–66, Figs. 2, 3, 5a–5c).

Although Petitioner argues that the recited “adjuster assembly” does not have to be structurally distinct from the recited “valve actuating assembly,” Petitioner apparently points to the same mechanical interaction of Fox’s lever 60, camshaft 58, cam surface 56, and shaft 34 for both the

“two positions” of the valve actuating assembly and for “adjusting the damping characteristics” of a position of the valve actuating assembly. *See* Pet. 14–19.

This issue would benefit from further development during trial. In particular, the parties should consider further developing if one of ordinary skill in the art would understand Fox to be disclosing that rotating lever 60 to rotate camshaft 58 so that cam surface 56 can adjust shaft 34 is both moving to a “position” and “adjusting the damping characteristics” of one of the positions, as required by claim 1.

3. Dependent Claims 2, 3, 7, 8, and 10–12

Claims 2, 3, 7, 8, and 10–12 ultimately depend from claim 1. Petitioner argues with citations to the record that Fox anticipates these dependent claims. Pet. 19–30. Patent Owner responds with the same arguments described above for claim 1. *See* Prelim. Resp. 16–22.

For reasons discussed above for claim 1, the parties should consider further developing during trial whether Fox anticipates claims 2, 3, 7, 8, and 10–12.

E. Asserted Obviousness Based on Fox, JP’279, and Nagai

1. JP’279 (Ex. 1007)

JP’279 discloses “[a] hydraulic shock absorber damping force adjustment mechanism for adjusting compression-side damping force and extension-side damping force.” Ex 1007, code (57).

Cylinder 1 has upper oil chamber S1 and lower oil chamber S2. Ex. 1007, 3, Fig. 1. Piston 10 slides within cylinder 1, and formed in piston 10 are compression-side oil passage 11 and extension-side oil passage 12. *Id.* at 3, Figs. 1, 2. Compression-side valve 13 and extension-side valve 14 are installed on piston 10. *Id.* at 3, Fig. 2. Hollow rod 7

contacts compression-side valve 13. *Id.* at 3. Figure 4 of JP'279 is below reproduced.

FIG. 4

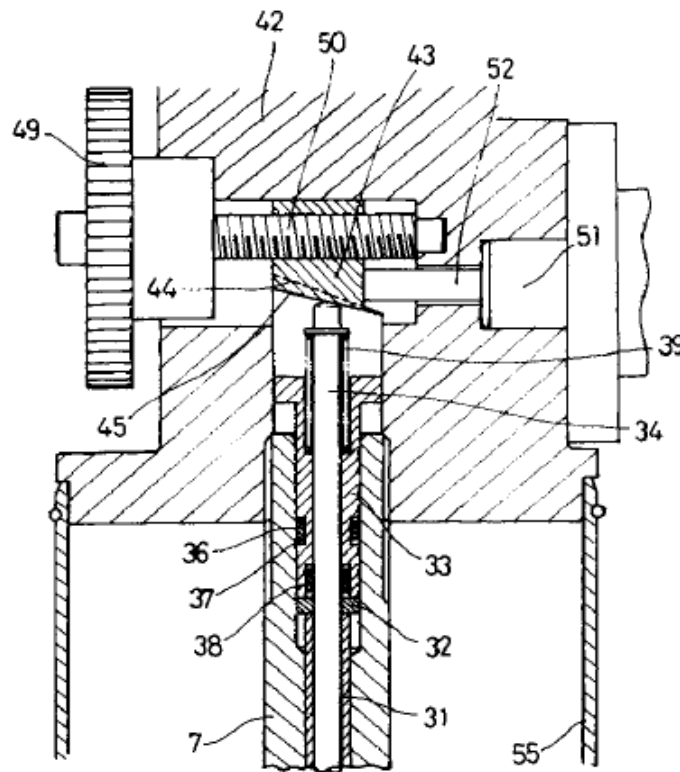


Figure 4 shows “a front view cross section” of a moving mechanism portion of a damping force adjustment mechanism. Ex. 1007, 6–7. When feed axle 50 is rotated, slider 43 moves in a radial direction, and push rod end 33 which contacts tapered surface 44 of slider 43 advances or retracts to change compression-side damping force. *Id.* at 5–6.

2. Nagai (*Ex. 1008*)

Nagai relates “particularly to a damping force adjusting mechanism for . . . a hydraulic damper.” Ex. 1008, 1:10–13. Figure 7 of Nagai is below reproduced.

FIG. 7

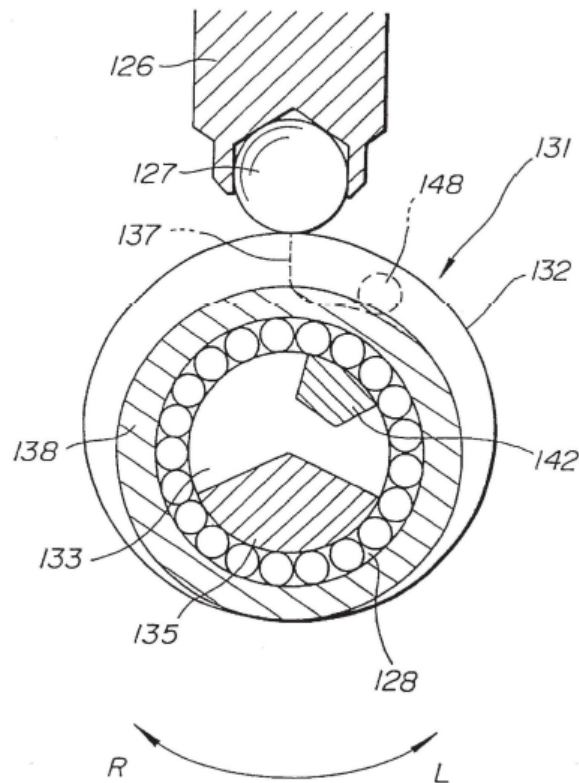


Figure 7 shows a cross-sectional view of a damping force adjusting mechanism. Ex. 1008, 2:66–67. Nagai’s hydraulic damper includes damper assembly 101 with cylinder 102 and piston 110 in sliding contact with cylinder 102. *Id.* at 5:48–56, Fig. 5. Piston 110 divides cylinder 102 into upper and lower oil chambers S3, S4, and piston 110 includes oil passage 111 and bypass oil passage 125 to generate damping forces. *Id.* at 5:58–62, 6:20–23, Fig. 5. Axially moving adjustment rod 126 varies the cross-sectional area of bypass oil passage 125, thereby adjusting the damping forces generated by piston 110. *Id.* at 7:56–60.

Damping force adjusting mechanism 170 includes needle housing 138 and eccentric cam 131 mounted in needle housing 138. Ex. 1008, 6:31–35.

Ball 127 rotates on cam surface 132 of eccentric cam 131 to axially displace adjusting rod 126. *Id.* at 6:36–43.

The angular position of eccentric cam 131 can be limited by projection 135 and integral stopper 142. Ex. 1008, 6:55–61. By limiting the angular position of eccentric cam 131, a minimum damping force and optimum damping force range can be defined. *Id.* at 6:63–7:3.

3. *Independent Claim 1*

Petitioner argues that Fox, JP’279, and Nagai each disclose an “actuator apparatus for controlling a valve mechanism of a suspension system.” Pet. 41–45 (citing Ex. 1003 ¶¶ 84–86; Ex. 1005, codes (54), (57), 6:36–64, 6:65–7:27, 8:3–30, Fig. 5; Ex. 1007, codes (54), (57), 5–6, Figs. 4, 5; Ex. 1008, 5:48–65, 6:32–46, 6:55–7:13, 7:56–60, Fig. 6).

For the recited “valve actuating assembly,” Petitioner relies on Fox’s shaft 34 and actuator arrangement 54 comprised of camshaft 58 and lever 60 that can vary fluid flow resistance. Pet. 45–46 (citing Ex. 1003 ¶¶ 87, 88; Ex. 1005, 7:8–11, 7:28–41, 7:61–8:34, 9:59–10:14, Fig. 5). Petitioner also argues that camshaft 58 is rotatable between an open and a closed/lockout positions. *Id.* at 47–48 (citing Ex. 1003 ¶¶ 89, 90; Ex. 1005, 6:11–16, 6:22–30, 7:61–8:22, 9:59–10:14, 11:33–39, Fig. 5).

For the recited “adjuster assembly,” Petitioner relies on JP’279’s slider 43 with tapered surface 44 and gear 49 and feed axle 50 that axially displace slider 43. Pet. 48–49 (citing Ex. 1007, Fig. 4); *see also id.* at 30–33 (arguing that JP’279 discloses an adjuster assembly).

a) Petitioner’s Asserted Reason for Combining

Petitioner argues that Fox, JP’279, and Nagai are in the same field. Pet. 36 (citing Ex. 1003 ¶ 75; Ex. 1005, code (57), 1:25–35; Ex. 1007, 1–2; Ex. 1008, 1:10–13). According to Petitioner, it would have been obvious to

modify Fox to include JP'279's slider 43 with tapered surface 44 on Fox's cam surface 56 of camshaft 58 for fine adjustment. *Id.* at 36–37 (citing Ex. 1003 ¶ 76); *see also id.* at 48 (arguing that it would have been obvious to include separate “adjuster assembly” and “valve actuating assembly”) (citing Ex. 1003 ¶ 91).

Petitioner contends that Fox expresses a desire for easy adjustment of damping characteristics and JP'279 discloses a capability for fine adjustment. Pet. 37 (citing Ex. 1005, 1:61–65; Ex. 1007, 6). Petitioner also contends that one of ordinary skill in the art would have recognized that fine-tuning of damping is preferred to improve a suspension system, such as Fox's system. *Id.* at 37–38 (citing Ex. 1003 ¶¶ 77–78, 91; Ex. 1005, 1:56–60; Ex. 1007, 6); *see also id.* at 49–50 (arguing it would have been obvious to implement JP'279 in Fox to achieve fine adjustment) (citing Ex. 1003 ¶¶ 92–96; Ex. 1005, Fig. 5 (annotated with proposed modification)). Petitioner further contends that the proposed modification was within ordinary skill in the art. *Id.* at 38–39 (citing Ex. 1003 ¶ 79; Ex. 1005, Fig. 5 (annotated with proposed modification)).

Petitioner argues that one of ordinary skill in the art would have been motivated to include Nagai's limiting means to ensure that damping forces are appropriate and optimum. Pet. 39 (citing Ex. 1003 ¶ 80; Ex. 1008, 2:22–40); *see also id.* at 50–51 (arguing that Fox and JP'279 would have been modified further by Nagai) (citing Ex. 1003 ¶¶ 81, 97, 98). Petitioner also argues that the proposed further modification would have been within ordinary skill in the art. *Id.* at 39–40 (citing Ex. 1003 ¶¶ 79, 81; Ex. 1008, 6:55–7:13). Petitioner explains how Fox modified by JP'279 would be further modified by Nagai. *Id.* at 40 (citing Ex. 1003 ¶ 82; Ex. 1005, 6:22–30, 7:61–8:30; Ex. 1008, 6:55–7:13).

Petitioner additionally contends that the proposed combination of Fox, JP’279, and Nagai “would have involved only a combination of known prior-art elements according to known methods to yield predictable results.” Pet. 41. In Petitioner’s view, one of ordinary skill in the art would have had a reasonable expectation of success in making the proposed “modifications to yield the known benefits of fine-tuning the compression damping characteristics of the suspension system and setting an optimum range of damping forces.” *Id.* (citing Ex. 1003 ¶ 83).

b) Petitioner Shows a Reasonable Likelihood of Prevailing

Based on the preliminary record, Petitioner sufficiently shows that its proposed combination teaches or suggests the limitations of claim 1 and that one of ordinary skill in the art would have combined Fox, JP’279, and Nagai in the manner asserted with a reasonable expectation of success.

Patent Owner responds that the asserted references, alone or in combination, fail to disclose the recited adjuster assembly. Prelim. Resp. 22–23, 26. Patent Owner argues that “each of the purported prior art references discloses a single means for adjusting damping characteristics,” and that “no reference discloses a position of a valve actuating assembly that can vary any damping characteristic independent of the other positions of the valve actuating assembly.” *Id.* at 23; *see also id.* at 23–24 (arguing what Fox and JP’279 disclose regarding adjustment of damping). Patent Owner also argues that “nothing in the record discloses arranging JP’279’s slider 43 having tapered surface 44 in an orientation that is perpendicular to the orientation of Fox’s cam 56 plane of rotation.” *Id.* at 24 (citing Ex. 1005, 5:46–52, Fig. 5; Ex. 1007, 2–5, Figs. 1, 2, 5). Patent Owner further argues that, because the proposed arrangement is not found in the references, Petitioner is using impermissible hindsight. *Id.* at 25.

Petitioner’s proposed combination does not rely on an express disclosure of two means for adjusting damping characteristics. *See* Pet. 36–38. Petitioner contends that it would have been obvious to combine Fox and JP’279 for benefits described by both references. *See id.* Because Petitioner identifies asserted benefits from the references, Petitioner does not appear to be using hindsight. *See id.* Additionally, the references themselves support that the proposed combination would have been combining known element according to known methods to yield predictable results. *See id.* at 41.

Regarding the asserted motivation to combine, Patent Owner responds that it is “simple hindsight recreation of the ’207 Patent claims.” Prelim. Resp. 26–27. Patent Owner argues that, in both Fox and JP’279, “a user may adjust the damping characteristics of the related damper in any incremental amount desired between the top and the bottom,” and that “[t]here are no leaps or jumps within the adjustment range.” *Id.* at 27. According to Patent Owner, the proposed combination “would have no effect whatsoever on the available adjustment range of Fox,” “adds **no** functionality and **no** range,” and “would provide **no** benefit but would add additional complexity to the design resulting in increased cost.” *Id.* at 28–29 (citing Pet. 39). Patent Owner also argues that there is no analysis for “two completely continuous surfaces somehow providing differing levels of ‘fine adjustment.’” *Id.* at 29–30 (citing Pet. 37–38; Ex. 1003 ¶ 91). Patent Owner further argues that the purported benefits and the combination being within ordinary skill in the art fail to show obviousness. *Id.* at 31.

Petitioner’s position appears to be that Fox and JP’279 provide different amounts of adjustment to damping characteristics. *See* Pet. 36–38. In Petitioner’s view, Fox’s damping adjustment is not as fine as JP’279’s damping adjustment. *See id.* Petitioner’s argument is that, by modifying

Fox with JP'279, the adjustment for reaching a particular point in the adjustment range can be finer using the tapered surface of JP'279 instead of the cam surface 56 of Fox. *See id.* Thus, according to Petitioner, one of ordinary skill in the art would have made the proposed combination.

For the reasons above and on the preliminary record, Petitioner shows a reasonable likelihood of prevailing in its challenge to claim 1.

4. Dependent Claims 2, 3, 7, 8, and 10–12

Petitioner argues with citations to the record that Fox, JP'279, and Nagai would have rendered obvious dependent claims 2, 3, 7, 8, and 10–12. Pet. 51–62. Patent Owner responds with the same arguments described above for claim 1. *See Prelim. Resp.* 22–32.

For reasons discussed for claim 1 and based on the preliminary record, Petitioner shows a reasonable likelihood of prevailing in its challenge to claims 2, 3, 7, 8, and 10–12 based on Fox, JP'279, and Nagai.

F. Asserted Obviousness Based on Yi, JP'279, and Nagai

1. Yi (Ex. 1006)

Yi “relates to a damping adjustable shock absorber.” Ex. 1006, 1:7–8. Figure 12 of Yi is below reproduced.

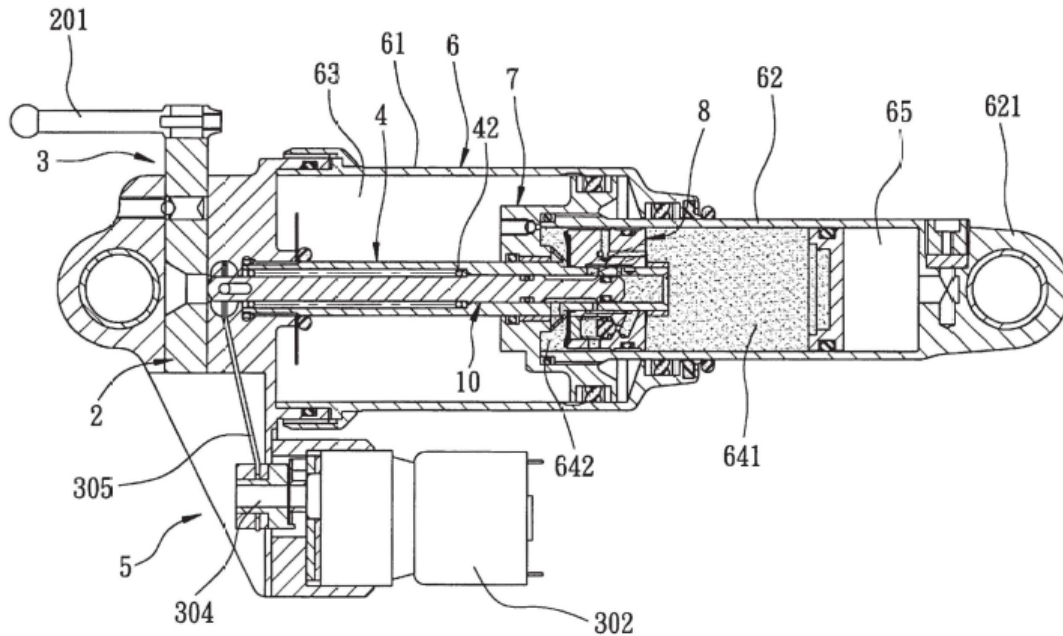


FIG. 12

Figure 12 shows Yi's shock absorber. Ex. 1006, 2:57–58, 5:50–51. Damping adjustable shock absorber 6 includes first and second cylinders 61, 62 coupled and moveable toward each other. *Id.* at 3:1–3, 3:7–8. Hollow shaft 4 extends through first and second cylinders 61, 62. *Id.* at 3:19–20. First piston 7 is sleeved movably on hollow shaft 4 in first cylinder 61, and second piston 8 is in second cylinder 62. *Id.* at 3:26–27, 3:34–35. Shock absorber 6 also includes valves 821, 831, 851, 861 to control damper fluid flow. *Id.* at 3:1–4:57

Damping adjusting rod 10 is disposed on hollow shaft 4 and has three axial positions that permit medium velocity or high velocity damper fluid flow to or from chambers 641, 642. Ex. 1006, 4:18–49. Down-flow adjusting unit 3 has eccentric shaft 2 which is connected to damping adjusting rod 10, and eccentric shaft 2 can turn to move damping adjusting rod 10 in an axial direction. *Id.* at 5:38–43. Handle 201 can operate eccentric shaft 2. *Id.* at 5:53–54.

2. *Independent Claim 1*

Petitioner argues that Yi, JP’279, and Nagai each disclose an “actuator apparatus for controlling a valve mechanism of a suspension system.”

Pet. 75–78 (citing Ex. 1003 ¶¶ 126–128; Ex. 1006, codes (54), (57), 2:66–3:6, 3:34–65, 4:18–49, 5:38–57, Figs. 1–4, 11, 12; Ex. 1007, code (54), 1–2, 5–6, Fig. 4; Ex. 1008, 5:48–65, 6:32–46, 6:55–7:13, 7:56–60, Fig. 6).

For the recited “valve actuating assembly,” Petitioner relies on Yi’s handle 201, camshaft operable by handle 201, and damping adjusting rod 10. Pet. 78–79 (citing Ex. 1003 ¶¶ 129, 130; Ex. 1006, 3:1–5:46, 5:51–57, Fig. 12). Petitioner also argues that Yi’s valves 831, 851 disclose a “valve mechanism” operably connected to the asserted valve actuating assembly. *Id.* at 79–81 (citing Ex. 1003 ¶ 130; Ex. 1006, 3:48–4:59, Fig. 4). Petitioner further argues that Yi’s camshaft 2 is rotatable to, at least, three damping positions. *Id.* at 81–82 (citing Ex. 1003 ¶ 131; Ex. 1006, 3:48–65, 4:18–30, 4:39–49, 5:38–44, Figs. 5–7).

For the recited “adjuster assembly,” Petitioner relies on JP’279’s slider 43 with tapered surface 44 and gear 49 and feed axle 50 that axially displaces slider 43. Pet. 83–84 (citing Ex. 1003 ¶ 133; Ex. 1007, 4–6, Fig. 4); *see also id.* at 66–68 (arguing that JP’279 discloses an adjuster assembly).

a) Petitioner’s Asserted Reason for Combining

Petitioner argues that Yi, JP’279, and Nagai are in the same field. Pet. 70 (citing Ex. 1006, code (57), 1:7–8; Ex. 1007, 1; Ex. 1008, 1:10–13). According to Petitioner, it would have been obvious to modify Yi to include JP’279’s slider 43 with tapered surface 44 for one of Yi’s settings for fine adjustment. *Id.* at 70–71 (citing Ex. 1003 ¶ 119); *see also id.* at 82–83

(arguing that it would have been obvious to include separate “adjuster assembly” and “valve actuating assembly”) (citing Ex. 1003 ¶ 132).

Petitioner contends that Yi expresses a desire for a wider range of damping characteristics and JP’279 discloses a capability for fine adjustment. Pet. 71 (citing Ex. 1006, 1:13–16; Ex. 1007, 3, 6). Petitioner also contends that one of ordinary skill in the art would have recognized that fine-tuning of damping is desired. *Id.* (citing Ex. 1003 ¶ 120; Ex. 1006, 5:66–6:7); *see also id.* at 84–85 (arguing it would have been obvious to implement JP’279 in Yi to achieve fine adjustment) (citing Ex. 1003 ¶¶ 123, 134; Ex. 1006, Figs. 5, 6 (annotated with proposed modification)). Petitioner further contends that the proposed modification was within ordinary skill in the art. *Id.* at 71–72 (citing Ex. 1003 ¶ 121; Ex. 1007, 5–6).

Petitioner argues that one of ordinary skill in the art would have been motivated to include Nagai’s limiting means to ensure that damping forces are appropriate and optimum. Pet. 72 (citing Ex. 1003 ¶ 122; Ex. 1008, 2:22–40); *see also id.* at 86 (arguing that Yi and JP’279 would have been modified further by Nagai) (citing Ex. 1003 ¶ 135; Ex. 1006, 3:60–65, 4:31–49). Petitioner also argues that the proposed further modification would have been within ordinary skill in the art. *Id.* at 72–73 (citing Ex. 1003 ¶ 123; Ex. 1008, 6:55–7:13). Petitioner explains how Yi modified by JP’279 would be further modified by Nagai. *Id.* at 73–74 (citing Ex. 1003 ¶ 124; Ex. 1006, 5:38–57, Fig. 12 (annotated with proposed modification)).

Petitioner additionally contends that the proposed combination of Yi, JP’279, and Nagai would have been “mere combinations of known prior-art elements according to known methods to yield predictable results.” Pet. 74 (citing Ex. 1003 ¶ 125). In Petitioner’s view, one of ordinary skill in the art would have had a reasonable expectation of success in making the proposed

“modifications to yield the known benefits of fine-tuning the compression damping characteristics of Yi’s suspension system and setting an optimum range of damping forces.” *Id.* at 74–75 (citing Ex. 1003 ¶ 125).

b) Petitioner Shows a Reasonable Likelihood of Prevailing

Based on the preliminary record, Petitioner sufficiently shows that its proposed combination teaches or suggests the limitations of claim 1 and that one of ordinary skill in the art would have combined Yi, JP’279, and Nagai in the manner asserted with a reasonable expectation of success.

Patent Owner responds that Yi, JP’279, and Nagai do not disclose “an actuator apparatus for controlling a valve mechanism of a suspension system with at least *one position* of the valve actuating assembly *always providing the same damping characteristics, while another position has an adjustable set of damping characteristics* adjusted via an adjuster assembly.” Prelim. Resp. 32. Patent Owner contends that Petitioner fails to show “an adjuster assembly . . . for adjusting the damping characteristics corresponding to at least one of the positions of the valve actuating assembly independently of the damping characteristics corresponding to another position of the valve actuating assembly.” *Id.* at 33.

Patent Owner argues that the asserted references disclose “a single means for adjusting damping characteristics” and do not disclose “a position of a valve actuating assembly that can vary any damping characteristic independent of the other positions of the valve actuating assembly.” Prelim. Resp. 33. According to Patent Owner, “Yi fails to disclose an adjuster assembly that may adjust the damping characteristics *at any one of [three different] axial positions*” and “provides no additional adjustment at all.” *Id.* at 33–34 (citing Ex. 1006, 4:18–48, 5:51–57, Fig. 5–7). Patent Owner also argues that JP’279, like Yi, does not disclose the recited “adjuster

assembly” nor “any sort of independence between position.” *Id.* at 34–35 (citing Ex. 1006, 4:18–48, 5:51–57, Figs. 5–7; Ex. 1007, 2–5, Figs. 1, 2, 5)

Petitioner’s proposed combination does not rely on an express disclosure of two means for adjusting damping characteristics. *See* Pet. 70–71. Petitioner contends that it would have been obvious to combine Yi and JP’279 for benefits described by both references. *See id.* Because Petitioner identifies asserted benefits from the references, Petitioner does not appear to be using hindsight. *See id.*

Petitioner also proposes modifying Yi’s eccentric camshaft 2 where it corresponds to the second axial position of damping adjusting rod 10 with JP’279’s tapered surface 44 to finely adjust the damper fluid flow associated with that axial position. *See* Pet. 71–72. On the record before us, the proposed modification would be “adjusting the damping characteristics corresponding to at least one of the positions . . . independently of the damping characteristics corresponding to another position.” *See id.* Furthermore, the record at this stage supports that the proposed combination would have been combining known element according to known methods to yield predictable results. *See id.* at 74.

Turning to the asserted motivation to combine, Patent Owner argues that it “is based on pure hindsight.” Prelim. Resp. 35. Patent Owner argues that both Yi and JP’279 have a variable height pusher and a shaft, and that “the range of adjustment is continuous, accounting for every amount of adjustment.” *Id.* at 35–36 (citing Ex. 1006; Ex. 1007, 1–2, 4–5). According to Patent Owner, “[t]here are no leaps or jumps within the adjustment range,” and the proposed combination “would have no effect whatsoever on the available adjustment range of Yi,” “adds **no** functionality and **no** range,”

and “would provide *no* benefit but would add additional complexity to the design resulting in increased cost.” *Id.* at 36–37 (citing Pet. 85).

Patent Owner contends that Petitioner’s motivation to combine amounts to what could be done, not what would be done. Prelim. Resp. 38–39 (citing Pet. 71; Ex. 1003 ¶ 121). Patent Owner also argues that there is no analysis for “two completely continuous surfaces somehow providing differing levels of ‘fine adjustment.’” *Id.* at 38–39 (citing Pet. 70–71; Ex. 1003 ¶¶ 118–121).

Petitioner, however, implicitly argues that Yi’s damping adjustment is not as fine as JP’279’s damping adjustment. *See* Pet. 70–72. Thus, according to Petitioner, one of ordinary skill in the art would have made the proposed combination. *See id.* At this stage, Petitioner’s argument is sufficient for institution. This dispute would benefit from further development during trial.

For the reasons above and on the preliminary record, Petitioner shows a reasonable likelihood of prevailing in its challenge to claim 1.

3. *Dependent Claims 2, 3, 7, 8, and 10–12*

Petitioner argues with citations to the record that Yi, JP’279, and Nagai would have rendered obvious dependent claims 2, 3, 7, 8, and 10–12. Pet. 86–100. Patent Owner responds with the same arguments described above for claim 1. *See* Prelim. Resp. 32–39.

For reasons discussed for claim 1 and based on the preliminary record, Petitioner shows a reasonable likelihood of prevailing in its challenge to claims 2, 3, 7, 8, and 10–12 based on Yi, JP’279, and Nagai.

IV. CONCLUSION

After considering the evidence and arguments presented in the Petition and the cited evidence, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing in proving that at least one of claims 1–3, 7, 8, and 10–12 of the '207 patent is unpatentable, and thus, we institute an *inter partes* review of all challenged claims on all presented challenges. 37 C.F.R. § 42.108(a).

At this stage of the proceeding, the Board has not made a final determination as to the patentability of any challenged claim or any underlying factual and legal issues.

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–3, 7, 8, and 10–12 of U.S. Patent No. 7,147,207 B2 is instituted with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of U.S. Patent No. 7,147,207 B2 shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

IPR2024-00492
Patent 7,147,207 B2

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