

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

THERABODY, INC.,
Petitioner,

v.

HYPERICE IP SUBCO, LLC,
Patent Owner.

Case PGR2025-00013
Patent 11,938,082 B2

Before JEFFREY N. FREDMAN, RICHARD H. MARSCHALL, and
ALYSSA A. FINAMORE, *Administrative Patent Judges*.

FREDMAN, *Administrative Patent Judge*.

DECISION
Granting Institution of Post-Grant Review
35 U.S.C. § 324

I. INTRODUCTION

A. *Background*

Therabody, Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting post-grant review of claims 1–16 and 18¹ (the “challenged claims”) of U.S. Patent No. 11,938,082 B2 (Ex. 1001, “the ’082 patent”). Hyperice IP Subco, LLC (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). Patent Owner also disclaimed claim 17. Ex. 2004, 1.

We have authority to determine whether to institute a post-grant review under 35 U.S.C. §§ 6, 324. Institution of a post-grant review is authorized by statute when “the information presented in the petition . . . would demonstrate that it is more likely than not that at least 1 of the claims challenged in the petition is unpatentable.” 35 U.S.C. § 324(a) (2018). Upon consideration of the Petition, Preliminary Response, and the evidence of record, we determine that the information presented shows that it is more likely than not that Petitioner would prevail in establishing unpatentability of at least one of claims 1–16 and 18, which are the challenged claims of the ’082 patent that remain after Patent Owner’s disclaimer.

B. *Related Proceedings*

Petitioner indicates that the ’082 patent was asserted in *Hyper Ice, Inc. v. Therabody, Inc.*, No. 8:24-cv-00390 (C.D. Cal.) (consolidated into *Hyper Ice, Inc. V. JOICOM Corp.*, No. 8:24-cv-00098 (C.D. Cal)). Pet. 1.

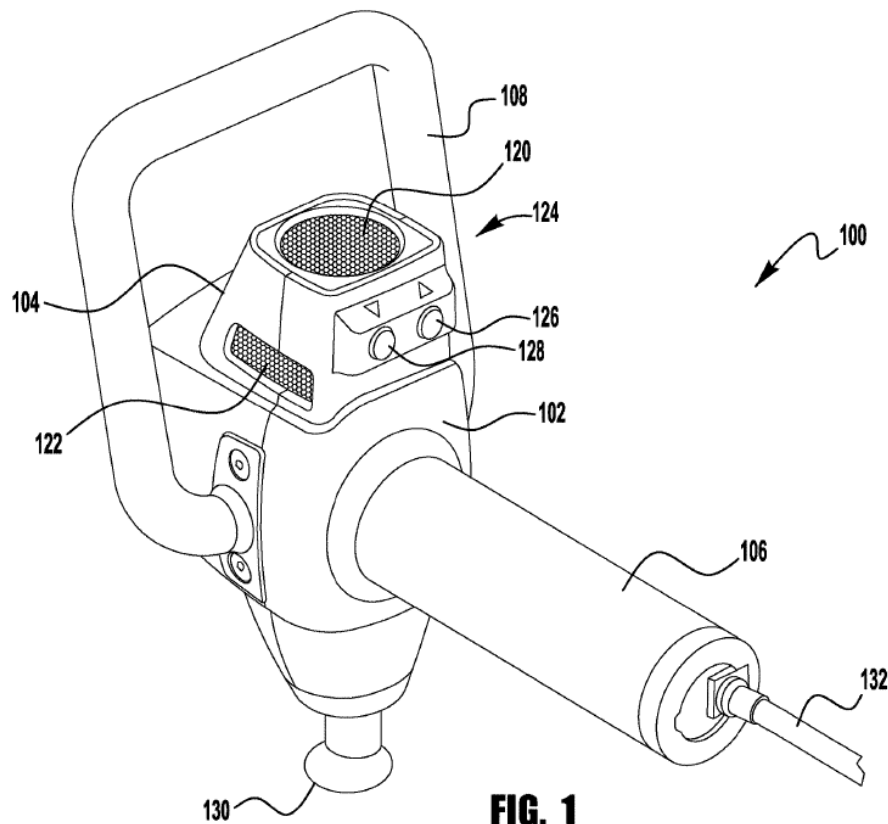
¹ Patent Owner disclaimed claim 17, and therefore we need not further address this claim pursuant to 37 C.F.R. § 42.207(e), “[n]o post-grant review will be instituted based on disclaimed claims.” *See* Ex. 2004, 1.

Petitioner also indicates that the '082 patent was asserted in a number of other litigations involving at least seventeen other parties. *See id.* at 1–2.

We note the '082 patent is a direct continuation of U.S. Patent Application No. 17/681,367, now U.S. Patent No. 11,857,482 B1, that is the subject of PGR2024-00053 between the same Petitioner and Patent Owner. Ex. 1001, code (63).

C. The '082 Patent (Ex. 1001)

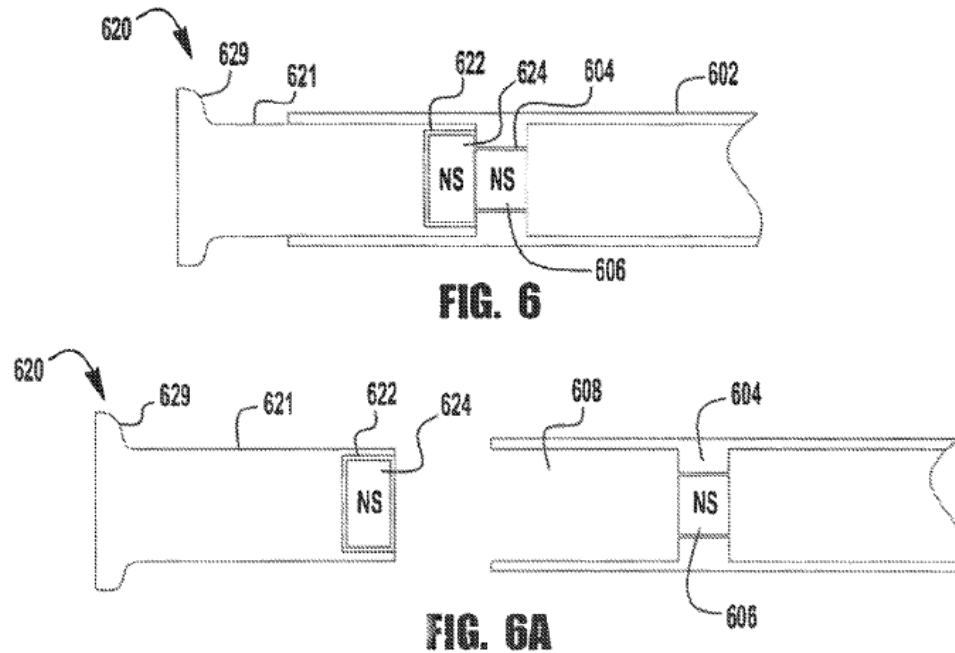
The '082 patent states the invention relates “to a deep muscle-stimulating device used to increase muscle metabolism, increase the lactic acid cycle and relieve pain.” Ex. 1001, 1:26–28. Figure 1 of the '482 patent is reproduced below:



F[igure] 1 is a perspective view of an exemplary embodiment of a hand-held massaging device 100. The exemplary massaging device 100 includes a main housing 102 that houses a motor and a drive unit and an upper housing 104 that includes

a heat sink and a fan. In addition, massaging device 100 includes a first handle 106, and a second optional handle 108. Handle 106 has a longitudinal axis that extends away from the housing 102. The massaging device 100 also includes a massaging head 130.

Id. at 3:35–43. Figures 6 and 6A of the '482 patent are reproduced below:



“Figures 6 and 6A illustrate an exemplary embodiment of a quick-connect system 600 for connecting a massaging head 620 to a piston 602.”

Id. at 6:47–49. The ’082 patent explains that “[w]hen providing a deep tissue massage using a massaging device, such as, for example, massaging device 100, it may be desirable to switch massaging heads to work on different muscles or different portions of muscles during the massage.” *Id.* at 6:49–53. The ’082 patent states the “exemplary quick-connect system 600 allows a user to quickly switch massaging heads 620. Moreover, the exemplary quick-connect system 600 may be used without turning off the massaging device 100.” *Id.* at 6:53–56.

D. Illustrative Claim

Claim 1 is illustrative of the challenged claims and recites:

1. [pre] A percussive massager comprising:
 - [a] a housing;
 - [b] a piston in the housing having a proximal end and a distal end, the distal end of the piston having a bore;
 - [c] a motor operatively connected to the proximal end of the piston, wherein the motor is configured to cause the piston to reciprocate at a first speed;
 - [d] a drive mechanism that controls a predetermined stroke length of the piston; and
 - [e] a quick-connect system comprising the distal end of the piston and a first massaging head, wherein the quick-connect system is configured to have a proximal end of the first massaging head inserted into or removed from the bore while the piston reciprocates the predetermined stroke length at the first speed.

Ex. 1001, 9:64–10:12 (formatting modified and brackets added corresponding to Petitioner’s labeling of elements of claim 1).

E. The Asserted Grounds of Unpatentability

Petitioner contends that the challenged claims are unpatentable based on a number of grounds, as set forth in the following table. Pet. 4. We exclude disclaimed claim 17 from these grounds.

Ground	Reference(s)/Basis	35 U.S.C. § ²	Claim(s) Challenged
1	Written Description	§ 112(a)	1–16, 18
2	Indefiniteness	§ 112(b)	13–16
3	Mabuchi, ³ Colloca ⁴	§ 103	1, 7, 9–11, 13, 18

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284, 285–88 (2011), revised 35 U.S.C. §§ 102, 103 effective March 16, 2013. Based on the uncontested assertion that July 1, 2013 is the earliest possible priority date for the ’482 patent, we apply the AIA versions of §§ 102 and 103 in this Decision. *See* Pet. 13.

³ Mabuchi, US 4,513,737, issued Apr. 30, 1985. Ex. 1005.

⁴ Colloca et al., US 2007/0150004 A1, published June 28, 2007. Ex. 1009.

4	Mabuchi, Colloca, Harris ⁵	§ 103	2–4
5	Pivaroff, ⁶ Clark ⁷	§ 103	1, 7, 9–11, 13, 18
6	Pivaroff, Clark, Harris	§ 103	2–4

Petitioner also relies on the Declaration of Dr. John Pratt. Ex. 1002.

II. DISCRETIONARY DENIAL

In view of the Acting Director’s memo bifurcating discretionary considerations and merits considerations,⁸ we note that Patent Owner had the opportunity to file a brief requesting discretionary denial of institution but did not file such a brief. Paper 7, 1. Accordingly, any discretionary issues were mooted, and the case was referred to this Board panel to consider the merits and other non-discretionary considerations. *Id.* at 1–2.

III. LEVEL OF ORDINARY SKILL IN THE ART

We consider the grounds of unpatentability in view of the understanding of a person of ordinary skill in the art (“POSITA”) as of the effective filing date of the challenged claims. Petitioner contends that

[a] person of ordinary skill in the art at the relevant time (“POSITA”) would have had a bachelor’s degree in mechanical engineering, or a related field, and two-to-three years of experience in the research, design, development, or testing of rotating or reciprocating mechanisms, with additional education substituting for experience and vice versa.

Pet. 13 (citing Ex. 1002 ¶ 37). Patent Owner contends that

[a] person of ordinary skill in the art (“POSITA”) as of the effective filing date of the Challenged Claims would have a working knowledge of product development and would likely have a degree in engineering and/or industrial design and/or at

⁵ Harris et al., US 6,432,072 B1, issued Aug. 13, 2002. Ex. 1006.

⁶ Pivaroff, US 6,682,496 B1, issued Jan. 27, 2004. Ex. 1007.

⁷ Clark, US 3,007,504, issued Nov. 7, 1961. Ex. 1014.

⁸ Available at <https://www.uspto.gov/sites/default/files/documents/InterimProcesses-PTABWorkloadMgmt-20250326.pdf>.

least three to five years of experience in conceiving, designing, engineering, and/or modifying such products and devices.

Prelim. Resp. 16.

While we appreciate that the parties differ slightly on the details of experience that an ordinary artisan would possess, we do not find a difference that affects our Decision. For purposes of this Decision, we rely on Patent Owner’s proposed level of ordinary skill in the art. The parties may provide briefing at trial, if appropriate, to explain why adoption of one definition over the other changes the remaining analysis.

We also note the level of ordinary skill in the art usually is evidenced by the prior art references themselves. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995).

IV. CLAIM CONSTRUCTION

In a *post-grant* review, we interpret a claim “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).” 37 C.F.R. § 42.200(b). Under this standard, we construe 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.” *Id.*

Neither party identifies any term that requires construction. Pet. 13–15; Prelim. Resp. 16–17. Accordingly, we need not construe any term at the present time.

V. GROUND 1 - WRITTEN DESCRIPTION

A. *Principles of Law*

“A specification that ‘reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date’ has adequate written description of the claimed invention.”

Novartis Pharms. Corp. v. Accord Healthcare, Inc., 21 F.4th 1362, 1368 (Fed. Cir. 2022) (citing *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010)). “[T]he test requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art.” *Id.* at 1368–69 (alteration in original).

We analyze the asserted ground of unpatentability in accordance with the above-stated principles.

B. Petitioner’s Position

Petitioner contends that “[a]ll the challenged claims are unpatentable because they lack written description supporting the full scope of the claimed ‘quick-connect system.’” Pet. 15.

1. Claim 1 - “quick-connect system”

Petitioner asserts that “[c]laim 1 purports to broadly claim **any** species of ‘system’ that is ‘a quick-connect system’” Pet. 17 (alteration in original). Petitioner asserts “at most, the ’082 Patent discloses only a single working example: the ‘quick-connect system’ with corresponding magnets in the shaft of a massaging head and within the bore of the piston.” *Id.* (citing Ex. 1001, 6:47–7:19). Petitioner asserts that the

narrow disclosure of a single purported “quick connect system,” using magnets of certain sizes and strengths to secure and remove the massaging head, fails to provide sufficient written description to support the challenged claims’ broad functional language claiming **any** “quick-connect system” that “is configured to have a proximal end of the first massaging head inserted into or removed from the bore while the piston reciprocates the predetermined stroke length at the first speed,” or that has “a proximal end of the first massaging head ... configured to be inserted into or removed from the bore while

the piston reciprocates the predetermined stroke length at the first speed.”

Id. at 18 (citing Ex. 1002 ¶¶ 83–88) (alteration in original).

2. *Claim 13 - “substantially cylindrical bore”*

Petitioner asserts that “[d]ependent Claim 13 is also unpatentable because the ’082 Patent lacks written description supporting the claimed ‘substantially cylindrical bore.’” Pet. 19 (citing Ex. 1002 ¶¶ 90–96). Petitioner asserts “in the context of the specification, the claims, and the prosecution history, a POSITA would understand that the bore would be cylindrical (not ‘*substantially* cylindrical’) so as to receive the proximal end of the attachment ‘while the piston reciprocates,’ ***without the need for alignment.***” *Id.* (citing Ex. 1002 ¶¶ 90–94).

Petitioner asserts that the “lack of disclosure of ***any*** shape of the bore in the piston, and the otherwise narrow disclosure of uniformly ‘cylindrical’ pockets elsewhere in the disclosed embodiment, fails to provide sufficient written description to support the challenged claims’ broadened recitation of a ‘*substantially* cylindrical bore’ in the piston.” *Id.* at 20.

C. *Patent Owner’s Position*

1. *Claim 1 - “quick-connect system”*

Patent Owner asserts “the mechanical arts are predictable, such that ‘[a] single embodiment may provide broad enablement.’ MPEP § 2164.03 (citing *In re Vickers*, 141 F.2d 522, 526-27, 61 USPQ 122, 127 (CCPA 1944)). This is a long held legal principle that Petitioner conveniently ignores.” Prelim. Resp. 26 (alteration in original). Patent Owner asserts that

a “quick-connect” system is a well-understood term of art in the mechanical arts featuring male and female components that can be attached and detached without the use of separate tools,

which is modified in the context of claims 1 and 18 in that the quick-connect system is used in the field of percussive massagers and must be operable while the piston reciprocates.

Id. at 30 (citing https://en.wikipedia.org/wiki/Quick_connect_fitting).

Patent Owner asserts “a quick-connect system would be known to a POSITA to include a number of different mechanical configurations.” *Id.*

2. *Claim 13 - “substantially cylindrical bore”*

Patent Owner asserts that the “specification reasonably conveys a piston having a bore and further reasonably conveys that the bore is a substantially cylindrical bore.” Prelim. Resp. 31. Patent Owner asserts

The written description notes that the “[q]uick-connect system 600 includes a piston 602 that has a hollow-end bore 608 for receiving the shaft 621 of a massaging head 620. Located with the bore 608 of piston 602 is a cylindrical seat 604.” Ex. 1001 at 6:57-60. Indeed, the perspective view of the piston 230 in Figure 4 (below top) shows a circular opening at the distal end thereof, and the cross-sectional view of the piston 602 in Figure 6A . . . shows a deep bore, which together with Figure 4 reasonably conveys to a POSITA that the bore in the piston is cylindrical, *i.e.*, a circle extended along a third dimension.

Id. (first alteration in original). Patent Owner asserts that Petitioner failed to cite a decision “supporting its novel argument that the common patent drafting term ‘substantially’ requires explicit, mathematically precise disclosure, and Federal Circuit precedent is to the contrary.” *Id.* at 33 (first alteration in original) (citing *Sonix Tech. Co., Ltd. v. Publ’ns Int’l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017)).

D. *Analysis*

Based on the current record, we find that the evidence of record better supports a finding that claims 1–16 and 18 comply with the written description requirement.

1. Claim 1 - “quick-connect system”

We are not persuaded that, on the current record, the '082 patent lacks written description of a “quick-connect system” solely because it provides only a single example. We recognize that one purpose of the written description requirement “is to ensure that the scope of the right to exclude . . . does not overreach the scope of the inventor’s contribution to the field of art as described in the patent specification.” *Reiffin v. Microsoft Corp.*, 214 F.3d 1342, 1345–46 (Fed. Cir. 2000). However, “written description is about whether the skilled reader of the patent disclosure can recognize that what was claimed corresponds to what was described; it is not about whether the patentee has proven to the skilled reader that the invention works, or how to make it work, which is an enablement issue.” *Alcon Rsch. Ltd. v. Barr Labs., Inc.*, 745 F.3d 1180, 1191 (Fed. Cir. 2014). That is, the “‘written description’ requirement must be applied in the context of the particular invention and the state of the knowledge.” *Capon v. Eshhar*, 418 F.3d 1349, 1358 (Fed. Cir. 2005).

Dr. Pratt states “[a]t the time the '082 Patent was filed, many different types of connectors not requiring a tool were known, including spring-biased ball detents (‘Pip Pins’), magnets, threaded fasteners, bayonet connectors, quarter-turn mechanisms, over-toggle hook mechanisms and hook & loop fasteners.” Ex. 1002 ¶ 54. This supports Patent Owner’s position that the broad scope of “quick-connect system” represents information known to the person of ordinary skill.

We therefore agree with Patent Owner that, consistent with *Capon*, an ordinary artisan would have understood before the time of filing of the instant claims that a variety of equivalent “quick-connect systems” were known. “It is not necessary that every permutation within a generally operable invention be effective in order for an inventor to obtain a generic

claim, provided that the effect is sufficiently demonstrated to characterize a generic invention.” *Capon*, 418 F.3d. at 1359.

2. *Claim 13 - “substantially cylindrical bore”*

We find that, on the current record, Patent Owner has the better position. Figure 6 of the '082 patent is reproduced below:

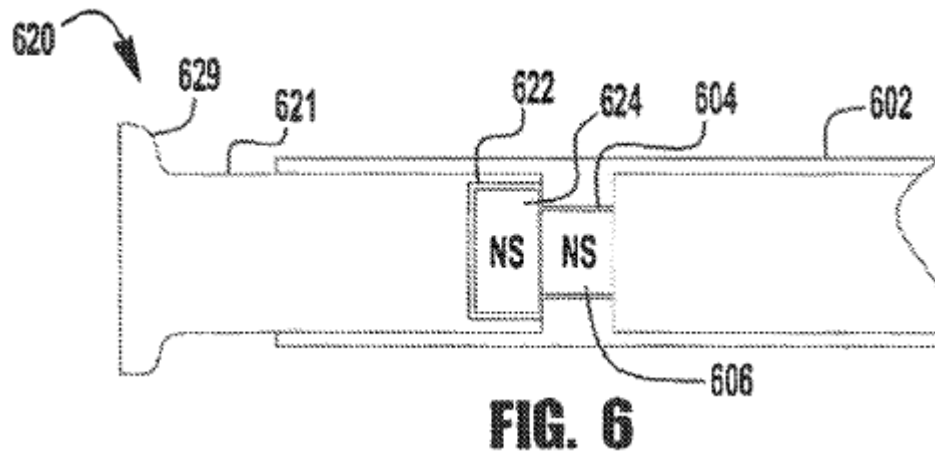


Figure 6 of the '082 patent describes “an exemplary embodiment of a quick-connect system 600 for connecting a massaging head 620 to a piston 602.” Ex. 1001, 6:47–49. The '082 patent discloses that “[m]assaging head 620 includes a shaft 621 having a cylindrical pocket 622 at the distal end. Located within the cylindrical pocket 622 is a magnet 624.” *Id.* at 6:63–65. The '082 patent explains “when the shaft 621 of massaging head 620 is slid into opening in bore 608, the magnets 606 and 624 are attracted to one another and magnetically hold massaging head 620 firmly in place.” *Id.* at 6:67–7:3.

Based on the current record and these descriptions in the '082 patent, we agree with Patent Owner that the evidence better shows possession of a massage head with a substantially cylindrical pocket that receives a magnet. As the '082 patent explains, magnet 624 is located in cylindrical pocket 622 which itself is part of massaging head 620, and this description

reasonably satisfies the recitation in claim 13 requiring “a substantially cylindrical bore.” Petitioner does not, on this record, persuade us otherwise.

Accordingly, we find that Petitioner has not successfully shown, on the current record, that it is more likely than not that it would prevail on this ground.

VI. GROUND 2 - INDEFINITENESS

A. *Principles of Law*

Under *Nautilus*, “[a] patent is invalid for indefiniteness if its claims, read in light of the patent’s specification and prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 899 (2014). “[A] patent must be precise enough to afford clear notice of what is claimed, thereby apprising the public of what is still open to them,” but the present standard recognizes that “absolute precision is unattainable.” *Id.* (internal quotation marks omitted).

B. *Petitioner’s Position*

1. “*Substantially Cylindrical*”

Petitioner asserts “[d]ependent Claim 13 recites that ‘the bore comprises a substantially cylindrical bore.’ Dependent Claims 14-16 recite a ‘substantially cylindrical structure within the bore.’ These claims are indefinite because the ’082 Patent provides no such standard for measuring whether a bore or a structure within a bore is ‘substantially cylindrical.’” Pet. 24 (citing Ex. 1002 ¶¶ 102–109). Petitioner asserts that “[p]resumably, there is some difference between ‘cylindrical’ and ‘substantially cylindrical,’ as Claim 15 uses both terms, with a ‘cylindrical’ element being a more specific requirement than a ‘substantially cylindrical’ element, i.e., a ‘*substantially cylindrical*’ structure comprises a *cylindrical* seat.”” *Id.*

Petitioner asserts:

[T]his difference is meaningful. For example, if the bore recited in Claim 13 was only “substantially cylindrical,” a perfectly cylindrical end of the massage head would either not fit within the bore or not be securely held, while a correspondingly “substantially cylindrical” end of the massage head would require careful alignment and thus not be “configured to have a proximal end of the first massaging head inserted into or removed from the bore while the piston reciprocates the predetermined stroke length at the first speed.”

Id. at 25 (citing Ex. 1002 ¶ 107).

C. Patent Owner’s Position

1. “Substantially Cylindrical”

Patent Owner asserts “[w]ords of degree like ‘substantially’ are not ‘inherently indefinite,’ but ‘the court must determine whether the patent provides some standard for measuring that degree.’” Prelim. Resp. 34 (quoting *Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d 1374, 1378 (Fed. Cir. 2015)). Patent Owner asserts “a person of ordinary skill in the art would know when the bore in the piston is substantially cylindrical enough, *i.e.*, sufficiently cylindrical, to accomplish the function identified in the claims themselves: receiving or allowing removal of the proximal end of the first massaging head while the piston reciprocates.” *Id.* at 36. Patent Owner further asserts “[i]n other words, the bore of the piston needs to be sufficiently cylindrical to enable the massaging head to be attached or removed while the massage device’s piston is reciprocating.” *Id.* at 36–37.

D. Analysis

We are not persuaded that, on the current record, that the term “substantially cylindrical” is indefinite. While the ’082 patent does not provide a definition for “substantially cylindrical,” the figures in the ’082 patent do exemplify cylindrical pockets containing magnets for quick release of massaging heads. *See, e.g.*, Ex. 1001, Fig. 6.

We appreciate that Dr. Pratt states

if the bore is not cylindrical enough, then a perfectly cylindrical proximal end of the massaging head would either not fit in that “substantially” cylindrical bore, or else would not be securely held by that bore. If, on the other hand, both the bore and the proximal end of the massaging head had the same non-cylindrical shape, a user would be required to align the two when inserting the massaging head into the bore, and thus it would not be “configured to have a proximal end of the first massaging head inserted into or removed from the bore while the piston reciprocates the predetermined stroke length at the first speed,” as recited in Claim 1.

Ex. 1002 ¶ 107. However, Dr. Pratt also acknowledges that “[m]agnetic connectors comprise a magnet on at least one of the two objects to be joined. These types of connectors are ubiquitous even today for driving threaded fasteners.” *Id.* ¶ 56. Thus, the current evidence of record shows that magnetic connectors were well known and that the ordinary artisan would have the capacity to determine whether a bore was sufficiently “substantially cylindrical” for a secure connection of a massage head or not. *See Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325, 1335 (Fed. Cir. 2010) (“Because the intrinsic evidence here provides a general guideline and examples sufficient to enable a person of ordinary skill in the art to determine [the scope of the claims], the claims are not indefinite even though the construction of the term ‘not interfering substantially’ defines the term without reference to a precise numerical measurement.” (alteration in original, citation omitted)); *SmithKline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1340–41 (Fed. Cir. 2005) (“The test for indefiniteness does not depend on a potential infringer’s ability to ascertain the nature of its own accused product to determine infringement, but instead on whether the claim delineates to a skilled artisan the bounds of the invention.”).

Accordingly, based on the current record, we find that Petitioner has not successfully shown it is more likely than not that it would prevail on this ground.

VII. GROUNDS 3–6 - OBVIOUSNESS

A. *Principles of Law*

The Supreme Court in *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007) reaffirmed the framework for determining obviousness set forth in *Graham v. John Deere Co.*, 383 U.S. 1 (1966). In *KSR*, the Court summarized the four factual inquiries set forth in *Graham* (383 U.S. at 17–18) that are applied in determining whether a claim is unpatentable as obvious under 35 U.S.C. § 103 as follows: (1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; (3) resolving the level of ordinary skill in the art;⁹ and (4) considering objective evidence indicating obviousness or non-obviousness.¹⁰ *KSR*, 550 U.S. at 406.

“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* at 416. “[W]hen the question is whether a patent claiming the combination of elements of prior art is obvious,” the answer depends on “whether the improvement is more than the predictable use of prior art elements according to their established functions.” *Id.* at 417.

The motivation-to-combine analysis is a flexible one. “[A]ny need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed,” [but the] “analysis ‘need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can

⁹ See *supra* Section III.

¹⁰ There is no asserted evidence pertaining to objective indicia of non-obviousness. See Prelim. Resp.

take account of the inferences and creative steps that a person of ordinary skill in the art would employ.”

Intel Corp. v. PACT XXP Schweiz AG, 61 F.4th 1373, 1379–80 (Fed. Cir. 2023) (alterations in original) (emphasis added) (quoting *KSR*, 550 U.S. at 418, 420). “[I]f there’s a known technique to address a known problem using ‘prior art elements according to their established functions,’ then there is a motivation to combine,” because *KSR* explains that “‘if a technique has been used to improve one device [or method], and a person of ordinary skill in the art would recognize that it would improve similar devices [or methods] in the same way, using the technique is obvious unless its actual application is beyond his or her skill.’” *Id.* at 1380 (quoting *KSR*, 550 U.S. at 417 and *Intel Corp. v. Qualcomm Inc.*, 21 F.4th 784, 797 (Fed. Cir. 2021)). If addressing a known problem, the prior art combination need not be “the *best* option, only . . . a *suitable* option.” *Id.* (quoting *Intel Corp. v. Qualcomm Inc.*, 21 F.4th at 800).

B. Overview of the Asserted Prior Art

We review and summarize the asserted prior art below. There is currently no dispute that each asserted reference is prior art.

1. Mabuchi (Ex. 1005)

Mabuchi is a United States patent that discloses a “a beauty treatment device having a space guide that permits an actuator to repeatedly reciprocate and controls the motion of the actuator wherein a patter repeatedly pats a skin surface being treated at a given rate.” Ex. 1005, 1:8–12. Figure 1 of Mabuchi is reproduced below:

FIG. 1

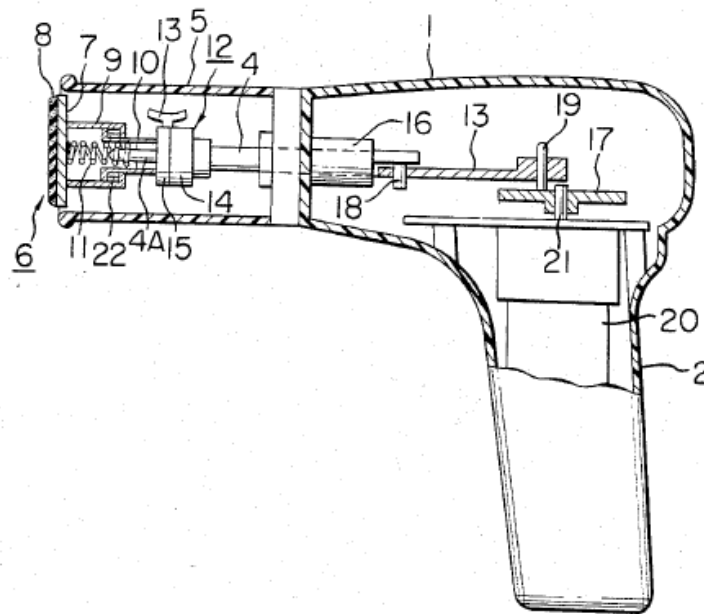


Figure 1 illustrates a beauty treatment device with a handle that houses “a motor 20 which causes a motor output shaft 21 to rotate via a reduction gear” that

causes the rotating disc 17 to rotate. A rod 3 is fitted at an end thereof to a crankshaft 19 provided on the rotating disc 17, the other end thereof being connected to an actuator 4 via a rod shaft 18. Consequently, as the rotating disc 17 rotates, the actuator 4 is caused to reciprocate within an actuator bearing 16 via the rod 3. . . . The patten assembly 6 is connected to the actuator 4 by means of a patten connecting mechanism 12.

Id. at 2:40–57.

Mabuchi states an “object of this invention to provide a beauty treatment device having patters of different shapes which are interchangeably used in accordance with the skin portions being treated.”

Id. at 1:47–50. Mabuchi states the “connecting mechanism 12 utilizing the different pola[r]ities of the magnets 43 and 44 ensures positive connection of the actuator 4 and the patten assembly 6, both of which are subjected to vibrations caused by high-speed reciprocating motion.” *Id.* at 8:33–37.

Mabuchi states the “changing of the patter assembly 6 can be easily accomplished since the actuator 4 and the patter assembly 6 are automatically disconnected merely by turning each other.” *Id.* at 8:40–43.

2. *Colloca (Ex. 1009)*

Colloca is a United States patent application publication that discloses “electromechanical manipulation/adjusting instruments used to apply controlled dynamic forces to the human body. More particularly, the invention has an improved force-time waveform and a sensor-controlled pulse mode.” Ex. 1009 ¶ 1. Figure 2 of Colloca is reproduced below:

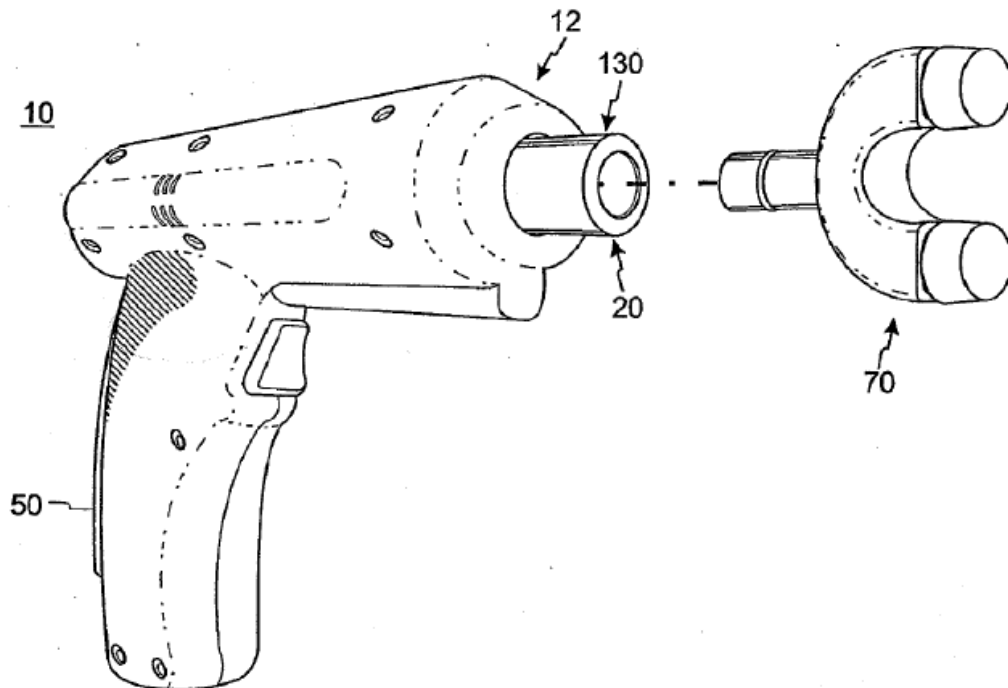


Fig. 2

Figure 2 depicts that “the housing 12 of the chiropractic adjusting instrument 10 has an opening 20 and an inside cavity 30 for mounting the electromechanical drive mechanism 100” where “thrust nose piece 130 is adapted to be movably mounted in the housing 10” with a “bore 139 adapted to the at least one impact head 70.” *Id.* ¶¶ 33–34.

3. *Harris (Ex. 1006)*

Harris is a United States patent that discloses “a hand-held combination vibratory/percussive massager having a pair of adjustable width percussion massage nodes.” Ex. 1006, 1:6–8. Figure 2 of Harris is reproduced below:

FIG. 2

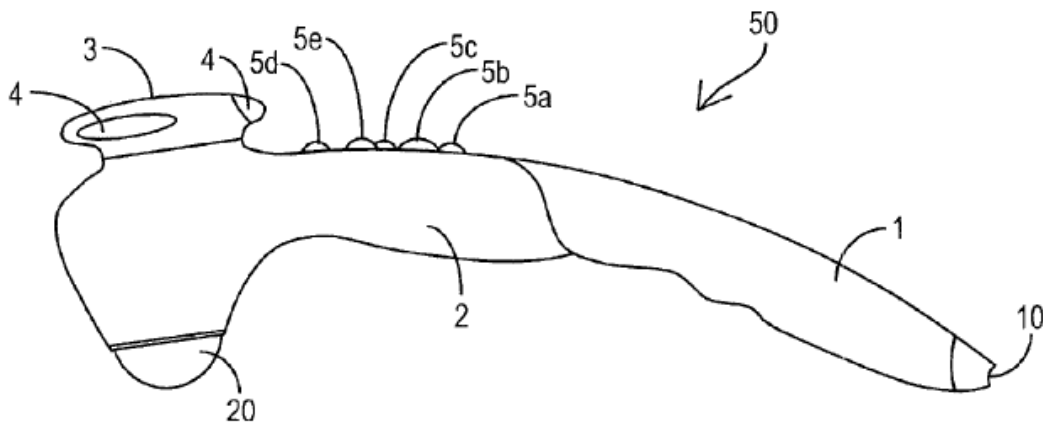


Figure 2 of Harris illustrates

a hand-held massager 50 comprises an elongated handle 1 contoured so as to be comfortable grasped in the hand of the user. The handle 1 is connected to the massager body 2 which includes control panel 5, a first vibratory massaging element comprising a generally flat rounded massager head 3, and a second percussive massaging element comprising two substantially semi-spherical shaped adjustable massage nodes 20.

Id. at 2:42–49. Harris states that “control panel 5 preferably comprises a capacitive switch . . . covering a plurality of touch sensitive control buttons or switches, including power control button 5a, speed setting control button 5b, LED speed indicator 5c, and various massage program buttons 5d-g for setting massage sensation, intensity and frequency.” *Id.* at 2:50–56.

4. *Pivaroff (Ex. 1007)*

Pivaroff is a United States patent that discloses “a deep muscle stimulator device to increase muscle metabolism, increase the lactic acid cycle and to relieve pain.” Ex. 1007, 1:8–10. Figure 6 of Pivaroff is reproduced below:

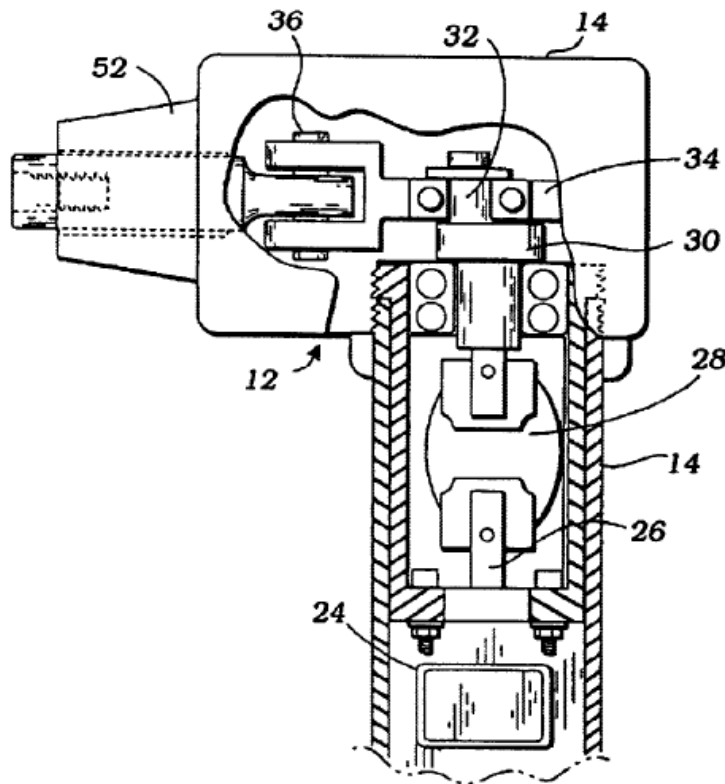


Fig. 6

Figure 6 illustrates a deep muscle stimulation device that

includes a body 12 comprised of an elongated, substantially hollow handle 14, a top element or housing 16, and a hollow head 44. . . . An electrical motor 24 is mounted within the elongated, hollow handle 14, and includes a central rotary arbor or shaft 26, driven by the motor.

Id. at 2:30–40. Pivaroff discloses that “the electric motor operates at a speed of between about 2000 to 3600 RPM, so as to rotate the shaft 26 and

coupling system 28 at that speed. This rotational speed is transferred to a reciprocating motion.” *Id.* at 3:45–48.

5. *Clark (Ex. 1014)*

Clark is a United States patent that discloses “tools adapted to magnetically hold and drive a multiplicity of different types of screws or the like.” Ex. 1014, 1:9–10. Figure 3 of Clark is reproduced below:

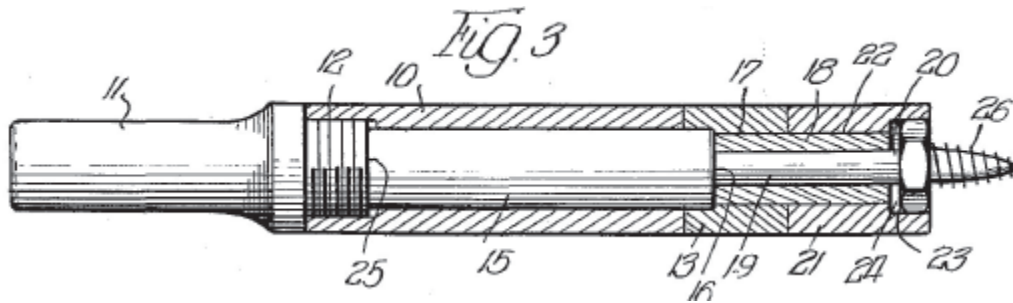


Figure 3 of Clark depicts a “bar magnet abuts at one end on the shank 11 and terminates at the other end near the joint between the shell 10 and the cylindrical member 13.” *Id.* at 3:2–4. Clark teaches that

the extended portion of the magnetically permeable member 19 is substantially coplanar with the shoulder 24 of the workpiece holder 21. Thus, when the workpiece is placed in the chamber 23, it is in touching relationship with the extended portion 20. By this arrangement the magnetic forces which are transmitted through the magnetically permeable member 19 from the magnet 15 are utilized to hold the workpiece in driving position.

Id. at 3:40–48. Clark further teaches that “workpiece holder 21 may be easily removed from its assembled position and a workpiece holder having a

different size or shape chamber 23 substituted therefor.” *Id.* at 4:1–3.

C. *Ground 3 - Obviousness over Mabuchi and Colloca*

1. *Petitioner’s Position*

a) *Element 1[pre]: “A percussive massager comprising”*

As to the preamble, Petitioner asserts

Mabuchi discloses that it “relates generally to a beauty treatment device, and more specifically to a beauty treatment device having a space guide that permits an actuator to repeatedly reciprocate and controls the motion of the actuator wherein a pater repeatedly pats a skin surface being treated at a given rate.”

Pet. 36 (citing Ex. 1005, 1:6–12).

b) *Element 1[a]: “a housing”*

Petitioner asserts “Mabuchi discloses that the ‘invention comprises a housing 2.’” Pet. 36 (citing Ex. 1005, 4:58, Fig. 1).

c) *Element 1[b]: “a piston having a proximal end and a distal end, the distal end of the piston having a bore”*

Petitioner asserts “Mabuchi’s actuator 4 is a piston having proximal and distal ends.” Pet. 36 (citing Ex. 1002 ¶ 120). Petitioner asserts:

To the extent that Mabuchi does not expressly disclose that the distal end of the piston has a bore, Colloca discloses a percussive device with a piston (a “preload switch plunger 150 (comprising a plunger rod 151 and a[] plunger cap 152))” having a proximal end and a distal end similar to Mabuchi’s actuator 4 (the piston).

Id. at 37 (alteration in original) (citing Ex. 1009, Figs. 9–10). Petitioner asserts that Colloca’s “‘thrust nose piece 130’ on the distal end of the piston includes a bore 139” that “‘may be integral with’ the plunger 150 and made of the same material.” *Id.* (citing Ex. 1009, Figs. 9–10; Ex. 1002 ¶¶ 114–115).

Petitioner asserts that it “would have been a simple design choice to modify Mabuchi’s pater connection mechanism to have a bore in the distal end of actuator 4 and coupling 14 that, like Colloca’s integral preload switch plunger 150 and thrust nose piece 130, was adapted to accept the shanks of a pater.” *Id.* at 38 (citing Ex. 1002 ¶ 124).

d) Element 1[c]: “a motor operatively connected to the proximal end of the piston, wherein the motor is configured to cause the piston to reciprocate at a first speed”

Petitioner asserts that Mabuchi “discloses that the motor 20 causes actuator 4 to reciprocate at a first speed. ‘Consequently, as the rotating disc 17 rotates, the actuator 4 is caused to reciprocate within an actuator bearing 16 via the rod 3.’” Pet. 40 (citing Ex. 1005, 2:50–52). Petitioner asserts that the “speed of the actuator 4’s reciprocation is based on factors including the angular velocity of the rotating disk 17, which is controlled by the speed of the motor” *Id.* (citing Ex. 1005, 3:39–57).

e) Element 1[d]: “a drive mechanism that controls a predetermined stroke length of the piston; and”

Petitioner asserts

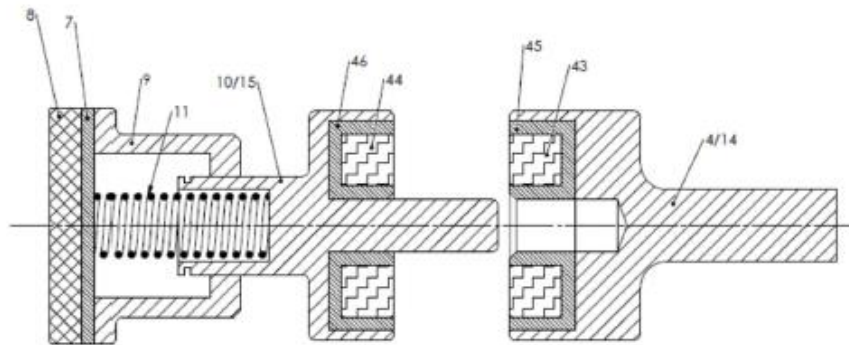
Mabuchi discloses a drive mechanism including rotating disc 17, crankshaft 19, and rod 3. The motor output shaft 21 is connected to rotating disc 17, while one end of rod 3 is fitted to crankshaft 19 on rotating disc 17, and the other end of rod 3 is connected to actuator 4.

Pet. 40 (citing Ex. 1005, 2:45–50; Ex. 1002 ¶¶ 126–127). Petitioner asserts that a “POSITA would understand that the location of crankshaft 19 on rotating disk 17 and rod 3 controls the predetermined stroke length of actuator 4.” *Id.* (citing Ex. 1002 ¶ 107).

f) Element 1[e]: “a quick-connect system comprising the distal end of the piston and a first massaging head, wherein the quick-connect system is configured to have a proximal end of the first massaging head inserted into or removed from the bore while the piston reciprocates the predetermined stroke length at the first speed.”

Petitioner asserts that “Mabuchi in view of Colloca discloses a quick-connect system comprising the distal end of actuator 4 and the padder assembly 6 (the ‘first massaging head’).” Pet. 41 (citing Ex. 1002 ¶ 129).

Petitioner cites to Figure 18 of Mabuchi as modified by Colloca, reproduced below:



Mabuchi Fig. 18 modified in view of Colloca (Ex-1002 ¶¶114, 129)

Petitioner describes the diagram of the modified padder connection mechanism above as including

magnet 43 implanted in the integrated actuator 4 and coupling 14. Ex-1005, 7:67-8:10. Along with padder assembly 6 (i.e., the “first massaging head”), a POSITA would understand this mechanism is a quick-connect system: “The changing of the padder assembly 6 can be easily accomplished since the actuator 4 and the padder assembly 6 are automatically disconnected merely by turning each other.” *Id.*, 8:40-43.

Id.

Petitioner further asserts that

Mabuchi’s self-aligning actuator 4 and padder assembly 6, as modified by the teachings of Colloca, are configured to have a proximal end (flange 15 and magnet 44) of the first massaging head inserted into or removed from the bore 139 formed by outer end shank 138 while the piston reciprocates the predetermined stroke length at the first speed.

Id. at 44 (citing Ex. 1002 ¶ 136).

2. *Patent Owner's Position*

a) *Motivation*

Patent Owner asserts that a “POSITA would not find the necessary motivation to combine the teachings of Mabuchi and Colloca.” Prelim.

Resp. 37–38. Patent Owner asserts that

Mabuchi’s device is intended to mimic the “repeated[] tap[ping] or pat[ting] the skin surface with fingertips or palms” to improve beauty while Colloca is intended to move bones. Ex. 1005 at 1:14-20; Ex. 1009 at ¶¶[0002]-[0003] and [0009]. Thus, Mabuchi’s own disclosure confirms the unrelatedness of Mabuchi and Colloca, directly contravening the very basis for Petitioner’s argument for combining these references.

Id. at 39 (alterations in original).

Patent Owner also asserts “Mabuchi and Colloca operate fundamentally differently, which results in their different patten assembly 6/impact head 70 mounting mechanisms.” *Id.* Patent Owner asserts “Mabuchi specifically teaches against operating the device without the space guide 5.” *Id.* at 40–41 (citing Ex. 1005, 5:39–50). Patent Owner asserts that “[o]n the other hand, Colloca, consistent with its intended use as a chiropractic device rather than as a beauty treatment device, can operate *only* when the impact head 70 is maintained in contact with a body.” *Id.* at 41. Patent Owner asserts that “Colloca requires a preload be applied to the impact head 70 by placing it against a body before the device can operated, *i.e.*, before reciprocal motion can be initiated.” *Id.* (citing Ex. 1009 ¶¶ 43, 54, 55).

Patent Owner asserts that

Petitioner’s bare argument that “Colloca complements Mabuchi by expressly teaching ‘a thrust nose piece 130’ including ‘a bore 139 adapted to the at least one impact head 70,’” rings hollow as the connection mechanism of Colloca is designed for a different operating environment and use profile than that of Mabuchi. Pet. at p. 35. In view of these many structural and

operational differences between Mabuchi and Colloca, Petitioner's superficial recitation of the obviousness standard without *any* articulated reasoning is legally deficient.

Id. at 42–43.

b) *Element 1[pre] - Percussive Massager*

Patent Owner asserts “Mabuchi is not a percussive massager and specifically distinguishes its disclosed beauty treatment device from massagers.” Prelim. Resp. 44. Patent Owner asserts that Mabuchi

is directed to a “beauty treatment device” having “a patten [that] repeatedly pats a skin surface,” which it explicitly contrasts with a “vibrator,” which “only presses and/or kneads the skin,” and a “conventional patting device,” which “belongs to the category of massager.” Ex. 1005 at 1:14-29. The “percussive massager” as recited in the Challenged Claims is, by its own terminology, a “massager” and, thus, different from Mabuchi’s “beauty treatment device.”

Id. at 44–45 (alterations in original).

c) *Element 1[b] - Combination of Mabuchi and Colloca*

Patent Owner asserts that the “Petition is entirely devoid of any factual basis supporting Petitioner’s assertion that such a POSITA *would have* been motivated to modify Mabuchi in this manner. Instead, Petitioner merely provides a diagram showing how the combination *could have* been made.” Prelim. Resp. 45 (citing Pet. 38). Patent Owner asserts:

Moreover, Petitioner fails to address the negative impacts of its proposed modifications. Notably, Petitioner’s expert states that, with respect to original/unmodified Figures 18 and 19 of Mabuchi, “[t]he protruding head of actuator 4 engages a bore in patter slide tube 10 to stabilize an impact head 6 upon attachment to the percussive massager.”

Id. at 47 (citing Ex. 1002 ¶ 121). Patent Owner asserts, therefore, that “in Petitioner’s own modified Figure 18 of Mabuchi, the patter assembly 6 (referred to as the impact head 6 by Petitioner’s expert) would lack the

stabilization provided by the protruding head of the actuator 4 extending into the padder body 10 in Mabuchi's unmodified Figure 18." *Id.* at 48.

Patent Owner asserts that Petitioner's modifications "would undesirably complicate the overall padder connection mechanism 12 by splitting the actuator 4 such that part of it protrudes from the padder assembly 6 while retaining another part of the actuator 4 for the coupling member 14 to attach thereto and to attach to the rod 3." *Id.* at 49. Patent Owner also asserts that "[i]ncreasing the mass of the padder assembly 6 would increase the momentum of the padder assembly 6, increasing the impact force on the skin" and that "moving additional mass onto the padder assembly 6 increases the risk that the padder assembly 6 unintentionally detaches from the actuator 4." *Id.* at 50.

d) *Element 1[e] – Insertion of padder while the piston reciprocates*

Patent Owner asserts "Mabuchi does not disclose, teach, or even suggest that the padder assembly 6 could be changed (*i.e.*, inserted into or removed from) while the actuator 4 reciprocates." Prelim. Resp. 51 (footnote omitted) (citing Ex. 1005, 5:65–67).

Patent Owner asserts "Petitioner overlooks or omits that Mabuchi requires that the 'space guide 5' be present during use" and that "the space guide 5 entirely encompasses the actuator 4 and the padder connecting mechanism 12 while only allowing the padder assembly 6 'to protrude slightly from the end face of the space guide.'" *Id.* at 52 (citing Ex. 1005, 1:4–42). Patent Owner asserts that "Petitioner fails to consider that replacing the padder assembly 6 would require removing the space guide 5 so that the padder assembly 6 could be grasped by a user, leaving Mabuchi in an unusable state until the space guide 5 was replaced." *Id.* at 53.

3. *Analysis*

On the current record, we find Patent Owner's arguments unpersuasive.

a) *Motivation*

Dr. Pratt notes that "Mabuchi and Colloca are from the same field of endeavor. Both references describe percussive massage devices." Ex. 1002 ¶ 112. Dr. Pratt cites Mabuchi's teaching of "a beauty treatment device having a space guide that permits an actuator to repeatedly reciprocate and controls the motion of the actuator wherein a patten repeatedly pats a skin surface being treated at a given rate" while Colloca is drawn to "electromechanical manipulation/adjusting instruments used to apply controlled dynamic forces to the human body." Ex. 1005, 1:7–25; Ex. 1009 ¶ 1. That is, both Mabuchi and Colloca are interested in applying some amount of force to a human body.

Dr. Pratt also explains that "Mabuchi and Colloca are directed to solving similar technical problems known in the art at the time of the invention." Ex. 1002 ¶ 113. Dr. Pratt cites Colloca as teaching that one disadvantage of prior devices is "they do not provide a thrust nose piece to accept interchangeable impact heads or reduce vibrations to the operator to provide comfort." *Id.*

Dr. Pratt notes that Mabuchi was interested in a device that allows substitution of different impact assemblies and states a "POSITA would have been motivated to modify Mabuchi to have a bore in the piston's distal end adapted to accept the shanks of interchangeable impact heads as taught by Colloca." Ex. 1002 ¶ 114; Ex. 1005, 1:42–49.

On the current record, we agree that an ordinary artisan, at the time the invention was made, would have had reason to implement a bore in Mabuchi's piston to accept different impact heads as taught by Colloca

because Mabuchi teaches that treatment “effects can be enhanced by changing the shape or patting intensity of the patter assembly 6” using a “patter connecting mechanism for facilitating the changing of the patter assembly 6.” Ex. 1005, 5:57–67. “If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability.” *KSR*, 550 U.S. at 417.

b) *Element 1[pre] - Percussive Massager*

On the current record, we find this argument unpersuasive as Patent Owner fails to identify any structural differences that result from the term “percussive massager” relative to the device of Mabuchi. While we note that the burden of production is not placed on Patent Owner, the preamble does not appear to require any structure for a “percussive massager” other than as an intended use of the device. “[T]he patentability of apparatus or composition claims depends on the claimed structure, not on the use or purpose of that structure.” *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 809 (Fed. Cir. 2002). Because we are not persuaded, on the current record, that the preamble limits the claim, we need not reach whether Mabuchi discloses a “percussive massager.”

c) *Element 1[b] - Combination of Mabuchi and Colloca*

On the current record, we find Patent Owner’s arguments unpersuasive. Patent Owner provides no evidence, just attorney argument, that replacement of patter assembly 6 of Mabuchi by inserting into a bore as shown in Colloca would require significant modification to the space guide. Indeed, Mabuchi states that changing the patter assembly would be “easily accomplished” while Colloca teaches “to provide a thrust nose piece to accept interchangeable impact heads.” Ex. 1005, 8:11–43; Ex. 1009 ¶ 3.

The substitution suggested by Petitioner is that, rather than having a bore or tube 10 in the patter device into which a rod extending from actuator 4 is inserted, the obvious device would comprise a rod that extends from the patter device and is inserted into a bore located in actuator 4. This understanding is supported by Dr. Pratt, who explains that:

A POSITA would understand that it would have been a simple design choice to modify Mabuchi's patter connection mechanism to make coupling 14 integral with actuator 4, like the thrust nose piece 130 formed integral with the plunger 150, and incorporating a bore in the distal end of actuator 4 and coupling 14 that, like Colloca's integral preload switch plunger 150 and thrust nose piece 130, was adapted to accept the shanks of a patter.

Ex. 1002 ¶ 124 (citing Ex. 1005, 5:52–64). Dr. Pratt states a “POSITA would have understood that their teachings could be combined with little to no change in their respective functions. Specifically, Colloca's bore for receiving the attachment head could be implemented on Mabuchi incorporating a bore to accept a massaging head shank, and optionally combining actuator 14 and coupling 4.” *Id.* ¶ 116.

d) Element 1[e] – Insertion of patter while the piston reciprocates

On the current record, we find Patent Owner's arguments unpersuasive. Dr. Pratt states that because the combination of Mabuchi and Colloca “would still include the magnets 43 and 44, these magnets would function in the same manner to “ensure[] positive connection of the actuator 4 and the patter[] assembly 6, both of which are subjected to vibrations caused by high-speed reciprocating motion.” Ex. 1002 ¶ 131 (first alteration in original). Dr. Pratt further explains

Mabuchi discloses that, by using a patter connecting mechanism with magnets 43 and 44, a “positive connection can be ensured ***without positioning*** the actuator 4 and the patter assembly 6.” [Ex-1005,] 8:33-39 (emphasis added).

Configuring the connecting mechanism to ensure a positive connection without positioning the actuator 4 and the padder assembly 6 suggests to a POSITA that the connecting mechanism is configured to have the padder assembly 6 (the first massaging head) inserted into or removed from the piston while actuator 4 reciprocates a predetermined stroke length at the first speed. Because the connecting mechanism is configured such that a user does not need to carefully control the angular orientation or spatial positioning of the padder assembly in relation to head of the actuator during attachment, a POSITA would understand that it is configured to be inserted or removed while the actuator was reciprocating.

Id. ¶ 132.

Dr. Pratt also states that this understanding is consistent with the prosecution history of the '482 patent where Patent Owner “argued ‘Miller is silent regarding the ability for its impact heads to be connected to the coupler during reciprocation of the reciprocating rod.’” *Id.* ¶ 134 (citing Ex. 1004, 2357). Dr. Pratt states:

A POSITA would understand that the Applicants were arguing that Miller’s coupler would not be understood to be configured to have the massage head inserted and secured while the piston reciprocates a predetermined stroke length at a first speed because it was instead designed to be aligned with the piston in order to be secured. Conversely, Mabuchi teaches that a padder connecting mechanism using magnets (like the one later disclosed in the '082 Patent) can be inserted and secured without such alignment, and easily removed in the same manner.

Id. ¶ 135.

The current evidence of record better supports a determination that Mabuchi and Colloca suggest a quick-connect system as required by claim 1 and that an obvious configuration for Mabuchi’s quick-connect system is to secure a massaging head into a bore within the piston. We do not find, on this record, Patent Owner’s arguments to the contrary persuasive.

Accordingly, we find that on the current record Petitioner has successfully shown it is more likely than not that it would prevail in establishing independent claim 1 is unpatentable on this ground.

e) *Claims 7, 9–11, 13, 18*

We find on this record that Petitioner comes forward with sufficient argument and evidence to show it is more likely than not that claims 7, 9–11, 13, 18 would have been obvious over Mabuchi. *See* Pet. 45–51. Patent Owner does not, at this time, separately argue any of the dependent claims. *See* Prelim. Resp. 54–55.

D. *Ground 4 - Obviousness over Mabuchi, Colloca, and Harris*

I. *Petitioner's Position*

a) *Claims 2–4*

Petitioner asserts that a “POSITA would have been motivated to combine Mabuchi, Colloca, and Harris, and would have had a reasonable expectation of success in doing so.” Pet. 51 (citing Ex. 1002 ¶¶ 152–160). Petitioner asserts that “[a]ll three references seek to address similar technical problems, i.e., providing percussive treatment that can vary depending on the user and targeted use.” *Id.* at 52 (citing Ex. 1002 ¶ 154).

As to claim 2, Petitioner asserts “Mabuchi discloses ‘repeatedly patting the skin surface at a given speed,’ and that the speed of the actuator 4 is controlled by the angular velocity ω of the rotating disk 17.” *Id.* at 53 (citing Ex. 1005, 9:14–17, 3:38–57).

As to claims 3 and 4 that recite a control panel with inputs and indicators, Petitioner asserts

Harris discloses a percussive massager with a “control panel 5” that is “sealed to the handle” (i.e., the exterior of the housing) and includes “a plurality of touch sensitive control buttons or switches.” Ex-1006, 2:49-57. A POSITA would understand that the control panel should be similarly located on the exterior of

the housing 2 of Mabuchi's device to be accessible to a user.
Ex-1002 ¶163.

Id. at 54.

Petitioner asserts that a "POSITA would have been motivated to improve Mabuchi, as modified by Colloca, by adding Harris's teaching of a control panel that allows the motor to be driven at multiple speeds, resulting in multiple different selectable speeds of the percussive massage." *Id.* at 52–53 (citing Ex. 1002 ¶ 157). Petitioner asserts that "because Mabuchi, as modified by Colloca, and Harris provide percussive massage devices that operate in similar ways, including controlling the speed of a percussive effect through the rotational speed of a motor, a POSITA would have understood that their teachings could be combined with little to no change in their respective functions." *Id.* at 53 (citing Ex. 1002 ¶¶ 159–160).

2. *Patent Owner's Position*

Patent Owner does not specifically address Ground 4. *See* Prelim. Resp.

3. *Analysis*

On the current record, we do not find deficiencies in Ground 4. The combination of Mabuchi, Colloca, and Harris is the situation where "a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill." *KSR*, 550 U.S. at 417. We agree with Petitioner that the ordinary artisan, interested in improving the Mabuchi and Colloca device by allowing control and selection of particular speeds of the motor, would have reasonably looked to other known prior art such as Harris that

teaches both how to control motor speeds and control panels and display devices that permit the user to select desirable motor speeds.

Accordingly, we find that on the current record Petitioner has successfully shown it is more likely than not that it would prevail on this ground. Petitioner has shown that claims 2–4 would have been obvious over Mabuchi, Colloca, and Harris.

E. Ground 5 - Obviousness over Pivaroff and Clark

1. Petitioner's Position

a) Element 1[pre]: "A percussive massager comprising"

Petitioner asserts "Pivaroff's device "provides deep muscle tissue with kinetic forms of percussion." Pet. 58 (citing Ex. 1007, 1:32–33).

b) Element 1[a]: "a housing"

Petitioner asserts "Pivaroff discloses that 'the deep muscle stimulation device 10 of the present invention includes a body 12 comprised of an elongated, substantially hollow handle 14, a top element or housing 16, and a hollow head 44.'" Pet. 58 (citing Ex. 1007, 2:30–33).

c) Element 1[b]: "a piston having a proximal end and a distal end, the distal end of the piston having a bore"

Petitioner asserts "Pivaroff discloses 'a connecting element or rod 38'" and asserts "Pivaroff also teaches that the distal end of the piston has a bore. Ex-1002 ¶177. As shown in Pivaroff's Figure 3 below, the outer end of Pivaroff's rod 38 'includes a recessed opening 40 formed therein.'" Pet. 59 (citing Ex. 1007, 2:44–50).

d) Element 1[c]: "a motor operatively connected to the proximal end of the piston, wherein the motor is configured to cause the piston to reciprocate at a first speed"

Petitioner asserts Pivaroff teaches "[a]n electrical motor 24 is mounted within the elongated, hollow handle 14, and includes a central rotary arbor or shaft 26, driven by the motor." Pet. 60 (citing Ex. 1007,

2:44–47) (alteration in original). Petitioner further asserts “Pivaroff’s ‘electric motor operates at a speed of between about 2000 to 3600 RPM, so as to rotate the shaft 26 and coupling system 28 at that speed. This rotational speed is transferred to a reciprocating motion.” *Id.* at 61 (citing Ex. 1007, 3:41–53).

e) *Element 1[d]: “a drive mechanism that controls a predetermined stroke length of the piston; and”*

Petitioner asserts “Cam element 30 and reciprocating link 34 form a drive mechanism. Pet. 61. A POSITA would understand that the stroke length of rod 38 is controlled by this drive mechanism, including the location of offset element or finger 32 on cam element 30.” *Id.* (citing Ex. 1002 ¶ 180).

f) *Element 1[e]: “a quick-connect system comprising the distal end of the piston and a first massaging head, wherein the quick-connect system is configured to have a proximal end of the first massaging head inserted into or removed from the bore while the piston reciprocates the predetermined stroke length at the first speed.”*

Petitioner asserts:

To the extent Pivaroff’s example of such a connecting means, threaded pin 42, and corresponding threaded recessed opening 40 does not expressly disclose a quick-connect system, Clark teaches a magnetic connecting means, where “magnetic forces ... transmitted through the magnetically permeable membrane 19 from the magnet 15 are utilized to hold the workpiece in driving position.” Ex-1014, 3:45-48. Clark discloses that this “the workpiece holder 21 may be easily removed from its assembled position and a workpiece holder having a different size or shape chamber 23 substituted therefor.” *Id.* at 4:1-3.

Pet. 63 (alteration in original).

g) *Motivation*

Petitioner asserts a “POSITA would have been motivated to apply Clark’s teaching of a magnetic connection mechanism to Pivaroff’s

teachings of connecting means 42 on the proximal end of hollow body 44 so that the changing of the hollow body can be easily accomplished.” Pet. 57 (citing Ex. 1002 ¶ 170). Petitioner asserts:

A POSITA would have had a reasonable expectation of success in combining Clark’s teachings with Pivaroff because they teach compatible systems—namely, connecting means for interchangeable heads that can easily be inserted or removed. Ex-1002 ¶171. Furthermore, Pivaroff and Clark’s connecting means operate in similar ways, a POSITA would have understood that their teachings could be combined with little to no change in their respective functions. Ex-1002 ¶¶ 172-173.

Id. at 58.

2. *Patent Owner’s Position*

a) *Analogous prior art*

Patent Owner asserts “Clark is directed to a screwdriver. Petitioner does not appear to contend that Clark is in the same field of endeavor as the ’082 Patent.” Prelim. Resp. 56. Patent Owner asserts “the ’082 Patent, even if narrowly considered as being directed to a quick-connect system for a percussive massager, is in a wholly different field of endeavor than screwdrivers.” *Id.*

Patent Owner asserts that the “problem Clark seeks to solve—use of different shaped tool ends to magnetically retain a screw in a magnetic screwdriver—is not reasonably pertinent to the particular problem the inventor of the ’082 Patent is involved.” *Id.* at 57. Patent Owner asserts

accepting Petitioner’s characterization of the ’082 Patent as being directed a quick-connect system for a percussive massager, a POSITA would not have viewed problems associated with retaining different tool ends in a screwdriver to drive differently shaped screws as reasonably pertinent to the problem with which the inventor of the ’082 Patent was involved, namely a connection system between a massage head and a percussive massager.

Id. at 57–58.

Patent Owner therefore asserts that “[b]ecause Clark is in a different field than the ’082 Patent and a POSITA would not have been expected to consult a reference describing magnetic screwdrivers when designing a percussive massager, Clark is non-analogous to the claimed invention and does not qualify as prior art.” *Id.* at 58.

b) *Motivation*

Patent Owner asserts “Petitioner engages in an improper results-oriented hindsight reconstruction of the claimed embodiments.” Prelim. Resp. 59. Patent Owner asserts “Clark does not compliment Pivaroff and is, in fact, unrelated to Pivaroff.” *Id.* at 60. Patent Owner asserts

Petitioner’s only apparent motivation for modifying Pivaroff’s threaded connection between the head 44 and the device itself is so that “the changing of the hollow body can be easily accomplished.” Pet. at p. 57. Pivaroff, however, is concerned with adequately attaching a metallic head 44 filled with granular materials 50 to the rod 38 and then reciprocating the head 44 between 2000 to 3600 RPMs. Pivaroff does not mention any concern about the difficulty or hassle of attaching the head 44 to the rod 38. Similarly, Clark does not refer to the ease with which a screw is attached to the magnetic screwdriver. This motivation appears to be of Petitioner’s own creation.

Id. at 61. Patent Owner also asserts that “[c]ommon sense dictates that the magnetic connection described in Clark would be entirely unsuitable to and unsuccessful in retaining the head 44 while it reciprocates between 2000 and 3600 RPMs in Pivaroff and would almost certainly result in the head 44 being unintentionally detached from Pivaroff.” *Id.* at 62.

3. *Analysis*

On the current record, we find Patent Owner’s arguments more persuasive on both points argued.

“Prior art is analogous if it is from the same field of endeavor or if it is reasonably pertinent to the particular problem the inventor is trying to

solve.” *Circuit Check Inc. v. QXQ Inc.*, 795 F.3d 1331, 1335 (Fed. Cir. 2015). We see no assertion by Petitioner or Dr. Pratt that the screw driver of Clark was in the same field of endeavor as the deep muscle stimulation device of Pivaroff. *See* Pet.; Ex. 1002. We appreciate that “familiar items may have obvious uses beyond their primary purposes.” *KSR*, 550 U.S. at 420. But in “a post-grant review before the Board, the petitioner bears the burden to show by a preponderance of the evidence that an asserted reference qualifies as prior art.” *CQV Co., Ltd. v. Merck Patent GmbH*, 130 F.4th 1344, 1349 (Fed. Cir. 2025). And Petitioner and Dr. Pratt fail to demonstrate that Clark is pertinent to any specific problem identified in the ’082 patent. *See* Pet.; Ex. 1002. On this record, we therefore agree that the evidence does not support a finding that Clark is analogous art to the ’082 patent.

We also agree with Patent Owner that the motivation to modify Pivaroff with Clark is unpersuasive. Petitioner reasons that a “POSITA would have been motivated to apply Clark’s teaching of a magnetic connection mechanism to Pivaroff’s teachings of connecting means 42 on the proximal end of hollow body 44 so that the changing of the hollow body can be easily accomplished.” Pet. 57. However, Petitioner does not point to a teaching in Pivaroff suggesting a desire to use different hollow bodies or an interest in replacing massaging heads. Indeed, on the current record, Pivaroff appears to use a single head that is not replaceable. And Petitioner provides no benefit in changing the hollow body 44 or any reason to do so, other than that it might be possible. “We must still be careful not to allow hindsight reconstruction of references to reach the claimed invention without any explanation as to how or why the references would be combined to produce the claimed invention.” *Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1374 n.3 (Fed. Cir. 2008).

Accordingly, we find that on the current record Petitioner has not successfully shown it is more likely than not that it would prevail on this ground.

F. Ground 6 - Obviousness over Pivaroff, Clark, and Harris

1. Petitioner's Position

Petitioner asserts that a “POSITA would have been motivated to improve the Pivaroff/Clark combination by adding Harris’s teaching of a control panel that allows the motor to be driven at multiple speeds, resulting in multiple different selectable speeds of the percussive massage.” Pet. 73 (citing Ex. 1002 ¶ 207).

2. Patent Owner's Position

Patent Owner does not specifically address Ground 6. *See* Prelim. Resp.

3. Analysis

As discussed above, we find that, on the current record, Ground 5 fails to establish the obviousness of the claims at issue in the ground. Petitioner does not identify any teaching in Harris that motivates the combination of Clark and Pivaroff.

Accordingly, we find that on the current record Petitioner has not successfully shown it is more likely than not that it would prevail on this ground.

VIII. CONCLUSION

After reviewing the information presented in the Petition and the Preliminary Response, as well as the evidence of record, we determine that Petitioner has established it is more likely than not that it will prevail in showing that at least one claim of the ’082 patent is unpatentable. Although we find some of Petitioner’s challenges unpersuasive based on the current

record, we institute as to all challenges in the Petition, and the parties may further address these issues during trial. *See* 37 C.F.R. § 42.208(a) (“When instituting post-grant 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.”).

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 324(a) post-grant review of claims 1–16 and 18 of the ’082 patent is hereby instituted on the grounds set forth in the Petition, commencing on the entry date of this Order, and pursuant to 35 U.S.C. § 324(c) and 37 C.F.R. § 42.4(c), notice is hereby given of the institution of a trial.

FURTHER ORDERED that the trial will be conducted in accordance with a separately issued Scheduling Order.

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