

UNITED STATES PATENT AND TRADEMARK OFFICE

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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MED-EL ELEKTROMEDIZINISCHE GERÄTE GES.m.b.H.,  
Petitioner,

v.

SONOVA AG,  
Patent Owner.

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Case IPR2020-00176

**U.S. PATENT NO. 6,761,681**

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**PATENT OWNER'S NOTICE OF APPEAL**

Pursuant to 35 U.S.C. §§ 141 and 142 and 37 C.F.R. §§90.2 and 90.3, Patent Owner, Sonova AG, hereby provides notice that it appeals the Final Written Decision of the Patent Trial and Appeal Board ("Board") entered June 2, 2021 (Paper 38), and from all underlying orders, decisions, rulings, and opinions adverse to Patent Owner regarding U.S. Patent 6,761,681 ("the '681 Patent") at issue in *inter partes* review IPR2020-00176, to the United States Court of Appeals for the Federal Circuit.

Pursuant to 37 C.F.R. § 90.2(a)(3)(ii) Patent Owner indicates that the expected issues on appeal may include, but are not limited to:

1. Whether the Board erred in finding the Petitioner met its burden to show unpatentability by a preponderance of the evidence that Claims 6-9, and 11 of the '681 Patent would have been obvious under 35 U.S. C. §103 over U.S. Patent No. 4,352,960 ("Dormer") in view of U.S. Patent No. 3,766,928 ("Goldberg") and any finding or determination supporting or relating to this issue.
2. Whether the Board erred in finding the Petitioner met its burden to show unpatentability by a preponderance of the evidence that Claim 12 of the

'681 Patent would have been obvious under 35 U.S. C. §103 over U.S. Patent No. 4,352,960 ("Dormer") in view of U.S. Patent No. 3,766,928 ("Goldberg") and U.S. Patent No. 3,749,853 ("Ely") and any finding or determination supporting or related to this issue.

3. Any issue decided adversely to Patent Owner in any orders, decisions, rulings and opinions.

Patent Owner has electronically filed this notice with the Patent Trial and Appeal Board, pursuant to 37 C.F.R. § 90.2(a)(1), 37 C.F.R. § 42.6(b)(1) and Federal Circuit Rule 15(a)(1).

Simultaneously herewith, Patent Owner is providing the Federal Circuit with a copy of the present Notice of Appeal (pursuant to 37 C.F.R. § 90.2(a)(2)(i) and Federal Circuit Rule 15(a)(1)) together with a \$500 fee (pursuant to 37 C.F.R. § 90.2(a)(2)(ii) and Federal Circuit Rule 52(a)(3)).

Date: July 13, 2021

Respectfully submitted,

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**CERTIFICATE OF SERVICE**

I certify that on July 13, 2021 this document was served on the Director at this address, under under 35 U.S.C. § 142 and 37 C.F.R. §§ 90.2(a)(1) and 90.3(a)(1):

Director of the United States Patent and Trademark Office  
c/o Office of the General Counsel  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450

I certify that on July 13, 2021, this document was electronically served on the United States Court of Appeals for the Federal Circuit, under 37 C.F.R. § 90.2(a)2), Fed. Cir. R. 15(a), and Fed. R. App. 15(a).

I certify that on July 13, 2021, this document was electronically served on counsel for MED-EL as provided in 37 C.F.R. § 42.6(e) via electronic email:

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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MED-EL ELEKTROMEDIZINISCHE GERÄTE GES.M.B.H.,  
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IPR2020-00176  
Patent 6,761,681 B2

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Before PATRICK R. SCANLON, ERIC C. JESCHKE, and  
RICHARD H. MARSCHALL, *Administrative Patent Judges*.

MARSCHALL, *Administrative Patent Judge*.

JUDGMENT

Final Written Decision

Determining All Challenged Claims Unpatentable

*35 U.S.C. § 318(a)*

Dismissing Petitioner's Motion to Exclude

*37 C.F.R. § 42.64*

## INTRODUCTION

MED-EL Elektromedizinische Geräte Ges.m.b.H. (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting institution of an *inter partes* review of claims 6–9, 11, and 12 of U.S. Patent No. 6,761,681 B2 (Ex. 1001, “the ’681 patent”). Sonova AG (“Patent Owner”) filed a Preliminary Response. Paper 7 (“Prelim. Resp.”). With our authorization (*see* Paper 9), Petitioner filed a Reply (Paper 10), to which Patent Owner filed a Sur-reply (Paper 12). Pursuant to 35 U.S.C. § 314, we instituted an *inter partes* review of claims 6–9, 11, and 12 of the ’681 patent on all presented challenges. Paper 13 (“Inst. Dec.”).

After institution, Patent Owner filed a Response (Paper 18, “PO Resp.”), Petitioner filed a Reply (Paper 23, “Pet. Reply”), and Patent Owner filed a Sur-reply (Paper 26, “PO Sur-reply”). In addition, Petitioner filed a Motion to Exclude (Paper 30), Patent Owner filed an Opposition to that Motion (Paper 31), and Petitioner filed a Reply (Paper 32). An oral hearing in this proceeding was held on March 8, 2021, and a transcript of the hearing is included in the record (Paper 37, “Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) (2018) and 37 C.F.R. § 42.73 (2019). For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that 6–9, 11, and 12 of the ’681 patent are unpatentable.

## BACKGROUND

### *A. Real Parties in Interest*

Petitioner states that its real parties in interest are itself and its subsidiary MED-EL Corporation, USA. Pet. 6. Patent Owner states that its

real parties in interest are itself, Advanced Bionics AG, and Advanced Bionics, LLC. Paper 8, 2.

*B. Related Matters*

The parties identify several related proceedings pursuant to 37 C.F.R. § 42.8(b)(2): (1) *MED-EL Elektromedizinische Geräte Ges.m.b.H. and MED-EL Corporation, USA v. Advanced Bionics, L.L.C.*, 1:18-cv-01530 (D. Del.) (filed October 3, 2018) (“Delaware Litigation”); (2) IPR2019-01469 (petition filed by Patent Owner’s real party in interest Advanced Bionics, LLC related to a patent that “Petitioner purports to own and has asserted in the Delaware Litigation”); (3) IPR2019-01572 (petition filed by Patent Owner’s real party in interest Advanced Bionics, LLC related to a patent that “Petitioner purports to own and has asserted in the Delaware Litigation”); and (4) IPR2020-00190 (petition filed by Petitioner related to a patent owned by Patent Owner’s real party in interest Advanced Bionics AG, which has been asserted in the Delaware Litigation). Pet. 4–5; Paper 8, 2–3.

*C. The ’681 Patent*

The ’681 patent issued on July 13, 2004, from an application filed on August 14, 2001. Ex. 1001, codes (22), (45). The ’681 patent relates to a “percutaneous or transcutaneous connecting device, featuring at least one passage or a passage-free connection through . . . the skin.” *Id.* at code (57). “Percutaneous access ports extend in physical, mechanical fashion through the skin,” while “[t]ranscutaneous access does not usually involve access hardware but often employs the induction principle, creating an electrical connection between the inside of the body and its external surroundings.” *Id.* at 1:16–22. According to the ’681 patent, “[i]t is therefore an objective of this invention to provide a percutaneous or transcutaneous connection



with the body of a living being and especially of a human which avoids” drawbacks such as complex designs that are awkward to use and not user friendly. *Id.* at 1:52–55. The ’681 patent describes the use of internal and external parts that use elongated magnets to provide the necessary coupling pressure and to align the access ports, which allows the use of the invention with “greater ease.” *Id.* at 1:58–65.

Figures 1A and 1B of the ’681 patent are reproduced below.

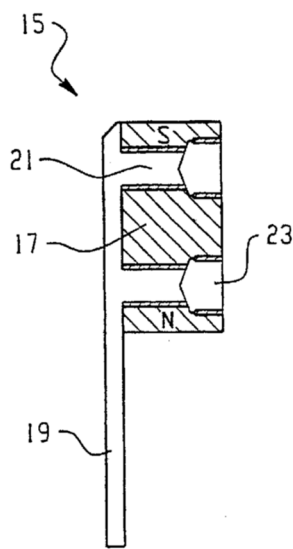


Fig. 1A

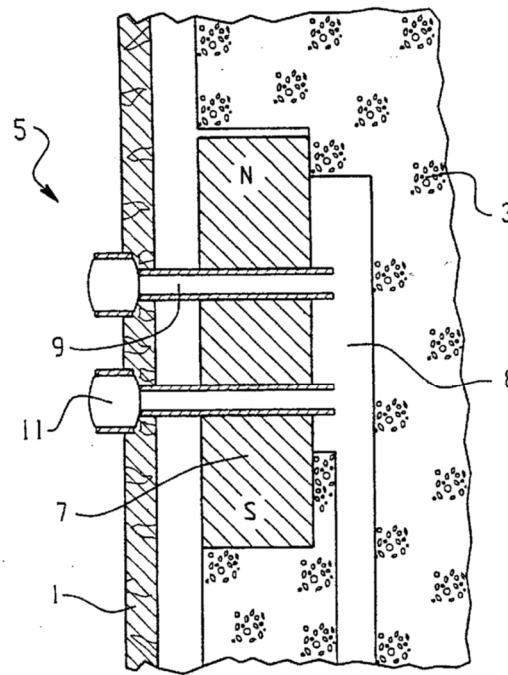


Fig. 1B

Figures 1A and 1B are “longitudinal section” views of “a percutaneous connection with two separate passages.” Ex. 1001, 2:15–16. Figure 1A depicts external plug-in part 15 having permanent magnet 17, two ports 21, connecting openings 23 on each end of ports 21, and intake/exit conduit 19. *Id.* at 2:40–46. Figure 1B depicts internal part 5 having “permanent magnet 7 positioned beneath the epidermis 1,” and two passages 9 with flared openings 11. *Id.* at 2:26–34. Connecting openings 23 on

external part 15 face and plug into flared openings 11 on internal part 5. *Id.* at 2:45–48. The Figures show the magnetic poles marked “N” and “S” on each of magnets 7, 17 extending in a direction generally parallel to epidermis 1. *Id.* at 2:29–30, 2:41–42. The conduits within both parts are “designed as to permit the introduction of substances such as medication, nutrients and the like, as well as the withdrawal of fluids from inside the body.” *Id.* at 2:53–56.

In addition to the percutaneous embodiment described above, the ’681 patent discloses a transcutaneous embodiment in Figure 3, near a user’s ear 31. Ex. 1001, 2:20–21, Fig. 3. The transcutaneous embodiment includes implanted part 25 having coil 27 that can receive or send electrical signals or transfer electrical energy. *Id.* at 3:19–21. Implanted part 25 also includes permanent magnet 29, “which serves to align and to retain in place an external part in relation to the implanted part.” *Id.* at 3:22–24. “Both the coil 27 and the permanent magnet 29 are implanted underneath the skin and are not visible from the outside,” such that, “in contrast to percutaneous connections, there is no physical, mechanical passage from inside the body to the outside or from the outside to the inside of the patient.” *Id.* at 3:26–31.

#### *D. Challenged Claims*

Petitioner challenges claims 6–9, 11, and 12. Pet. 7. Of those claims, claims 6, 8, 9, and 12 are independent. Ex. 1001, 4:32–6:4. Claim 6 is reproduced below.

6. A percutaneous or transcutaneous connecting device for providing a connection through an outer surface of a living being characterized by a permanent magnet (7, 29) adapted to be positioned in the area of the outer surface (1,3) with its poles extending essentially parallel thereto, and at least one inductive,

capacitive or other passage-free connection adapted to be between inside and outside of the body of a wearer.

*Id.* at 4:32–39.

*E. Evidence and Asserted Grounds*

Petitioner asserts that claims 6–9, 11, and 12 are unpatentable on the following grounds:

<b>Claim(s) Challenged</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>
6–9, 11	103(a)	Dormer, <sup>1</sup> Goldberg <sup>2</sup>
12	103(a)	Dormer, Goldberg, Ely <sup>3</sup>
9	102(b)	Hooven <sup>4</sup>

Petitioner also relies on the Declarations of David L. Trumper, Ph.D. Exs. 1002, 1018. Patent Owner relies on the Declaration of Darrin J. Young, Ph.D. Ex. 2014.

ANALYSIS

*A. Legal Standards*

To prevail in its challenges, Petitioner must prove unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.”

*Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016)

(citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the

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<sup>1</sup> US 4,352,960, issued October 5, 1982 (“Dormer”) (Ex. 1003).

<sup>2</sup> US 3,766,928, issued October 23, 1973 (“Goldberg”) (Ex. 1004).

<sup>3</sup> US 3,749,853, issued July 31, 1973 (“Ely”) (Ex. 1006).

<sup>4</sup> US 4,676,772, issued June 30, 1987 (“Hooven”) (Ex. 1005).

challenge to each claim”)). This burden of persuasion never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burdens of proof in an *inter partes* review).

Petitioner relies on obviousness in its challenges to the claims that we address below. A claim is unpatentable as obvious under 35 U.S.C. § 103(a) 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) when in evidence, so-called secondary considerations. *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966).

*B. Level of Ordinary Skill in the Art*

The level of skill in the art is “a prism or lens” through which we view the prior art and the claimed invention. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). “The person of ordinary skill in the art is a hypothetical person who is presumed to know the relevant prior art” at the time of the invention. *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). Factors that may be considered in determining the level of ordinary skill in the art include, but are not limited to, the types of problems encountered in the art, the sophistication of the technology, and educational

level of active workers in the field. *Id.* In a given case, one or more factors may predominate. *Id.*

Petitioner contends that a person having ordinary skill in the art would have had “the equivalent of a Bachelor of Science degree in electrical engineering, mechanical engineering or physics or a related discipline with course work in electromagnetics, and two years’ experience designing or developing electromagnetic devices.” Pet. 17–18 (citing Ex. 1002 ¶ 24). Patent Owner states that “[f]or the purposes of this IPR only, Patent Owner does not dispute MED-EL’s POSA definition.” PO Resp. 23.

We adopt Petitioner’s asserted level of ordinary skill because it is consistent with the problems addressed by the ’681 patent and the prior art of record.

### *C. Claim Construction*

In *inter partes* reviews, we interpret claims in the same manner used in a civil action under 35 U.S.C. § 282(b). 37 C.F.R. § 42.100(b); *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc) (setting forth claim construction approach in district court cases). Under that standard, we generally give claim terms their ordinary and customary meaning, as would be understood by a person of ordinary skill in the art at the time of the invention, in light of the language of the claims, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1313–14. Although extrinsic evidence, when available, may also be useful when construing claim terms under this standard, extrinsic evidence is generally “less reliable” than the intrinsic record. *See id.* at 1318–19. Only terms that are in controversy need to be construed, and then only to the extent necessary to resolve the

controversy. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

Petitioner proposes constructions for several claim terms. First, Petitioner argues that “in the area of the outer surface” (in claims 6, 8, and 9) means “near the skin or the bone adjacent the skin.” Pet. 18–19. Patent Owner does not dispute Petitioner’s proposed construction. *See* PO Resp. 23–30. Petitioner’s proposed construction is supported by the record, and we apply it in this Decision.

Second, Petitioner argues that “at least one conduit” (in claim 12) “should receive its ordinary meaning, namely, ‘a pipe, tube, or the like, for conveying water or other fluid.’” Pet. 21–23. Patent Owner opposed Petitioner’s proposal in its Preliminary Response, but does not oppose the construction, or argue that the prior art fails to disclose this limitation in claim 12, in its Patent Owner Response. *See* Prelim. Resp. 21–22; PO Resp. 23–30, 58 (arguing that Petitioner’s Ground 2 challenging claim 12 does not cure the deficiencies Patent Owner alleges with respect to Ground 1). In our Institution Decision, we noted that we were not persuaded that the term requires construction, and invited the parties to address the issue further during trial if necessary. Inst. Dec. 29–31. Neither party addresses this claim construction issue or the application of the term to the prior art in its post-institution briefing. PO Resp. 23–30, 58; Pet. Reply 22–30; PO Sur-reply 1–22. We decline to construe the limitation because no issue in this proceeding turns on its construction. We apply the ordinary meaning to the term “at least one conduit.”

Third, Petitioner argues that “inductive, capacitive or other passage-free connection adapted to be between inside and outside of the body of a

wearer” (in claim 6) means “a paired relationship between an implanted element interacting via energy with an external element without a physical passage between the inside and outside of the body.” Pet. 19–21. Patent Owner argues that Petitioner’s proposal improperly refers to “via energy” such that it encompasses magnetic connections. PO Resp. 23. Patent Owner contends that the phrase means a “connection via electrical or electromagnetic signals and/or electrical energy that takes place without physical passages.” *Id.* (citing Ex. 2014 ¶ 76). Patent Owner does not argue that Petitioner’s proposed combination of Dormer and Goldberg fails to disclose this limitation, and appears to rely on its construction as part of its no motivation to combine argument. *See id.* at 31–33, 53 n.5. We need not resolve the parties’ dispute over the construction of this limitation because, even if we apply Patent Owner’s proposal, we would still find the challenged claims unpatentable. We apply Patent Owner’s construction in our analysis below.

Fourth, Patent Owner argues that we should construe the preamble of claim 9 as limiting, and that “transcutaneous or percutaneous” withdrawal in the preamble requires passage across the skin surface. PO Resp. 25–30. Petitioner does not dispute that the preamble to claim 9 limits the claim, but argues that Patent Owner’s construction improperly reads “transcutaneous” out of the claim because transcutaneous does not encompass withdrawal across the skin. *See* Pet. 31 (“This preamble requires any of three alternatives.”), 50–51 (asserting that Hooven discloses the requirements of the preamble); Pet. Reply 23–26. Because the parties appear to agree that the preamble limits claim 9, we treat the preamble as limiting in our analysis below. We need not resolve the parties’ further disputes because they only

arise in the context of Petitioner’s third ground based on Hooven, which we do not reach because we find claim 9 unpatentable based on Dormer and Goldberg, for the reasons provide below. *See* Pet. 50–53; PO Resp. 59–60; Pet. Reply 23–26. As to application of the preamble of claim 9 to Dormer and Goldberg, Petitioner provides persuasive and undisputed argument and evidence that Dormer discloses the requirements of the preamble under any reasonable construction. *See* Pet. 31 (relying on Dormer’s transfer of electrical energy via coils as disclosing preamble limitations); PO Resp. 30–33.

*D. Obviousness of Claims 6–9 and 11 Based on Dormer and Goldberg*

Petitioner challenges claims 6–9 and 11 under 35 U.S.C. § 103 based on Dormer and Goldberg. Pet. 24–28. For these challenges, Petitioner cites to the asserted references and the Trumper Declaration. *Id.* We first provide an overview of Dormer and Goldberg, and then address the parties’ arguments and evidence.

*1. Overview of Dormer*

Dormer relates to “a bio-electronic signal coupling device (such as a hearing aid having a cochlear implant unit and a sound receiving unit) utilizing rare-earth magnets to properly align and secure an external member (such as the sound receiving unit) with an internal member (such as the cochlear implant unit).” Ex. 1003, 1:10–16. Dormer states that “it is desirable that there be no mechanical connection which extends through the skin of the user between the internal and external units.” *Id.* at 1:66–2:1. Dormer discloses a “transcutaneous coupling apparatus” having magnets associated with a first member under the skin and a second member just



outside a user's skin in order to magnetically secure the members. *Id.* at 2:33–38, 2:68–3:8. Dormer's Figure 1 is reproduced below.

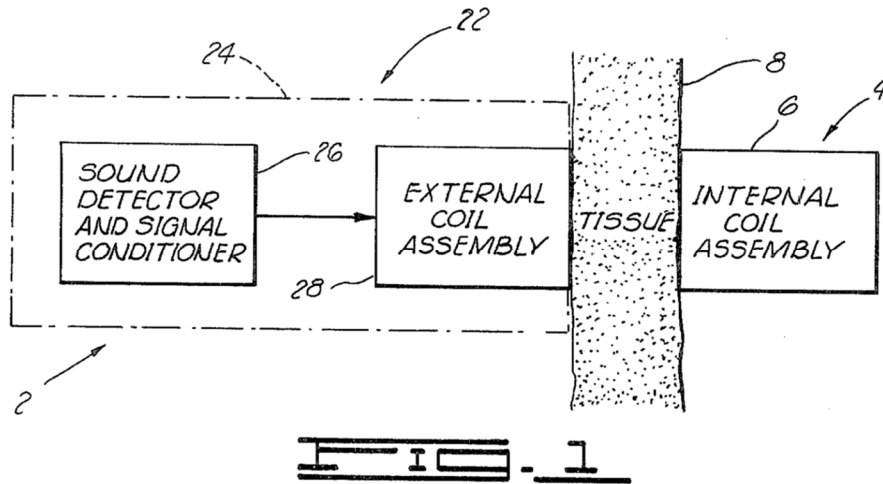


Figure 1 “is a schematic illustration and block diagram of a preferred embodiment of the present invention.” Ex. 1003, 3:29–30. Figure 1 depicts hearing aid 2 having internal first member 4 shown as internal coil assembly 6, which in the preferred embodiment is a cochlear implant unit including an electronic receiver. *Id.* at 3:55–59. “[I]nternal coil assembly 6 is subcutaneously located beneath a layer of tissue 8[,] which includes the epidermal and dermal layers of the skin.” *Id.* at 3:65–67. Figure 1 also depicts second member 22, which includes signal generating and transmitting means 24, which in turn includes “sound detector and signal conditioner means 26 and an external coil assembly 28.” *Id.* at 4:16–22. Signal conditioner means 26 includes microphone 30, which detects sound and converts it into an electrical signal that is then amplified and modulated before “electromagnetic transmission transcutaneously through the intervening tissue 8.” *Id.* at 4:38–53, Fig. 4.

Dormer discloses several embodiments for magnetically coupling the internal and external members. In the first embodiment, magnet 38 in the

middle of pot-type core-half 20 of the internal member and a similar magnet in the external member couple the two members together. Ex. 1003, 5:8–13, 5:21–27, Fig. 2. In that embodiment, “[t]he magnetic coupling arises by placing attractive poles of the first and second magnets toward each other so that the magnetic lines of force extend through the intervening tissue 8 to retain the internal and external coil assemblies in alignment adjacent the intervening skin.” *Id.* at 5:27–32. In a second embodiment, two separate magnets 44, 46 are disposed in each of the first and second members. *Id.* at 6:32–47, Fig. 5. According to Dormer, with this configuration, “misalignment is less likely to occur once the first and second members are magnetically coupled” and “a single, predetermined alignment” can be achieved through the selection of polarities in each of the magnets. *Id.* at 6:48–53, 7:1–21. In addition to these two embodiments, Dormer states that “a ring magnet disposed along the periphery of the pot-type core-half could be used.” *Id.* at 7:35–36.

## 2. Overview of Goldberg

Goldberg discloses a pacemaker having “a pacer rate adjustment mechanism which utilizes magnetic coupling.” Ex. 1004, code (57). Goldberg’s mechanism enables a user to adjust the “rate-controlling potentiometer” in the device from outside the patient. *Id.* Potentiometer 16 includes a shaft that, when turned, controls the pacer rate. *Id.* at 3:20–24. Goldberg discloses the potentiometer’s shaft is coupled to magnet 30 within housing 20, such that rotation of magnet 30 adjusts the pacer rate. *Id.* at 3:22–26. Magnet 30 “is in the form of a disc with a central hole, and it is magnetized diametrically,” i.e., “the north and south poles of the magnet are at opposite ends of one of its diameters.” *Id.* at 3:38–42, Fig. 2.

Goldberg discloses two methods of rotating shaft 30 and in turn modifying the pacer rate. In the first embodiment, a user can rotate magnet 30 by placing an external magnet, larger than magnet 30, “on the patient’s skin in the vicinity of the pacer and then rotating it.” *Id.* at 4:15–18; *see also id.* at Fig. 1 (showing pacer unit, including housing 20 that encloses magnet 30, for use in first embodiment), Fig. 2 (showing diametrically magnetized magnet 30). The poles of the rectangular external magnet are at opposite ends of its longest dimension. *Id.* at 4:10–13. In the second embodiment, Goldberg employs a second diametrically magnetized disc magnet 52 disposed just outside housing 20, with the north and south poles of magnets 30, 52 “disposed adjacent to each other” so that “[i]f magnet 52 is turned, magnet 30 turns with it.” *Id.* at 4:51–53, 4:63–67, Figs. 4–5. Goldberg’s Figure 5 is reproduced below.

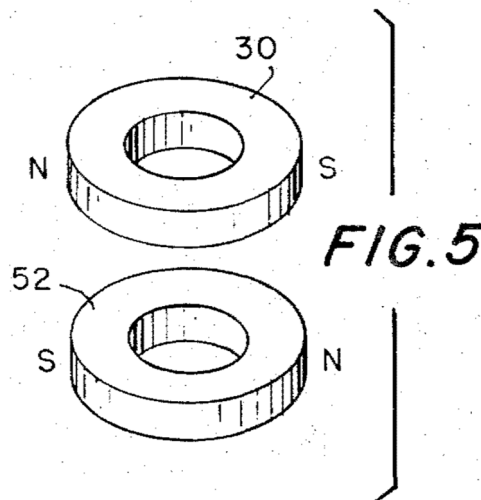


Figure 5 “depicts the face-to-face relationship of the two diametrically magnetized disc magnets.” Ex. 1004, 2:64–66. In the embodiment that corresponds to Figure 5, both magnets are disposed under a patient’s skin and are turned by inserting a needle through the patient’s skin and into axial

bore 56a “so that when the needle is turned the disc and the embedded magnet [52] turn with it.” *Id.* at 4:53–56.

### 3. Discussion

Petitioner asserts that the combination of Dormer and Goldberg discloses all limitations of claims 6–9 and 11. Pet. 24–35. Petitioner provides analysis of each limitation in the claims, with citations to the references that correspond to each of the claim limitations. *Id.* Petitioner also cites to the relevant declarant testimony. *See id.* (citing various portions of Ex. 1002). Petitioner asserts that Dormer discloses all of the limitations of the claims with the exception of the orientation of the poles of the magnet “extending essentially parallel” to the outer surface of a living being, and relies on Goldberg for that limitation. *See id.* at 24 (citing Ex. 1002 ¶ 63). Patent Owner argues that neither Dormer nor Goldberg discloses the limitation found in each challenged claim requiring a device having a permanent magnet “with poles extending essentially parallel to the skin.” PO Resp. 30–33. Patent Owner also argues that it would not have been obvious to modify Dormer’s magnets in the manner Petitioner proposes. *Id.* at 34–58.

We first address whether the combination of Dormer and Goldberg discloses all of the limitations of claims 6–9 and 11. We then address the motivation to combine the references.

#### a. Disclosure of the Claim Limitations

##### 1) Undisputed Limitations

Petitioner contends that the Dormer discloses nearly all of the limitations of claims 6–9 and 11. Pet. 24–35. For example, with respect to claim 6, Petitioner asserts that Dormer discloses a “transcutaneous coupling

device” with internal and external units allowing transfer of electrical signals via electromagnetic induction that satisfies the requirements of the preamble. Pet. 24–25 (citing Ex. 1003, code (57), 1:29–34, 2:63–66; citing Ex. 1002 ¶ 64). As to the claimed “permanent magnet (7, 29) adapted to be positioned in the area of the outer surface (1,3),” Petitioner argues that Dormer discloses magnets just above and below the surface of the skin of a patient. Pet. 25 (citing Ex. 1003, 2:69–3:5, 7:29–36). Petitioner also argues that the pot-type core-half Dormer employs was widely known in the industry, with the magnets located in the central portion as shown in Dormer’s Figures 2 and 5 “or about the periphery of the core-half as suggested for a ring magnet.” *Id.* at 25–26 (citing Ex. 1002 ¶¶ 65–66; Ex. 1012; Ex. 1014, 1:10–11). As to claim 6’s final limitation requiring “at least one inductive, capacitive or other passage-free connection adapted to be between inside and outside of the body of a wearer,” Petitioner argues that Dormer discloses electromagnetically inductive transmission between the coils in the internal and external parts. Pet. 27–28 (citing Ex. 1002 ¶ 64; Ex. 1003, 3:65–4:4, 4:23–24, 4:58, 5:26–27).

With the exception of the limitation in each independent claim requiring a magnet having “poles extending essentially parallel” to the outer surface, Patent Owner does not address or dispute Petitioner’s arguments and evidence. PO Resp. 30–33. We have reviewed Petitioner’s arguments and evidence as to the undisputed limitations of claim 6, as well as the undisputed limitations of claims 7–9 and 11. *See* Pet. 24–35. Petitioner

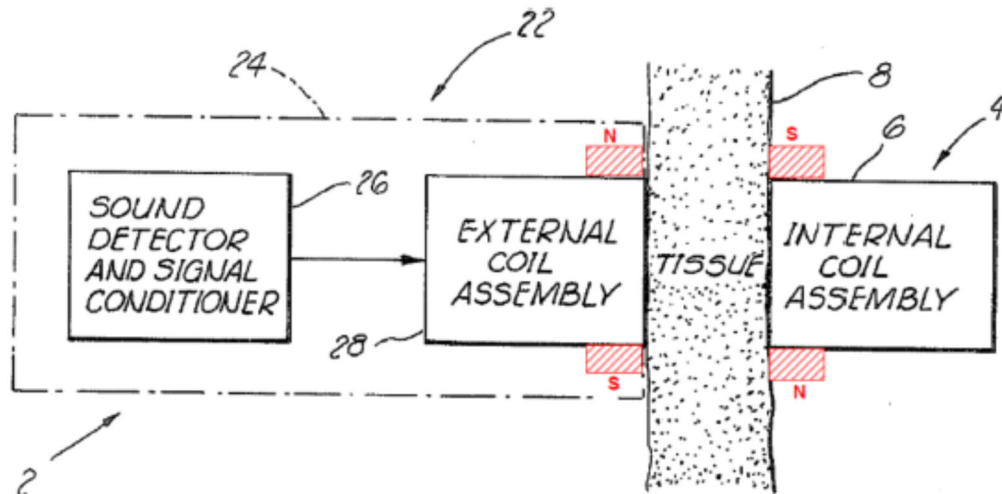
establishes sufficiently that the combination of Dormer and Goldberg discloses each of these undisputed limitations. *See id.*<sup>5</sup>

2) *Magnet Having Poles Extending Essentially Parallel to the Outer Surface*

As to the limitation in independent claims 6, 8, and 9 requiring a magnet having “poles extending essentially parallel” to the outer surface, i.e., the skin, Petitioner argues that Dormer suggests use of a ring magnet along the periphery of a pot-type core-half and Goldberg discloses magnets that are magnetized diametrically. Pet. 26 (citing Ex. 1003, 7:35–36; Ex. 1004, 2:63–65, 3:39–42, Figs. 2, 5). Petitioner argues that when implementing the diametrically magnetized ring magnets shown in Figure 5 of Goldberg on Dormer’s connecting device, the magnets are attracted to one another, and will sandwich the skin tissue between the magnets as in Dormer, so that they are parallel to one another and the skin surface. *Id.* at 27 (citing Ex. 1002 ¶ 67). Petitioner’s annotated version of Dormer’s Figure 1 is reproduced below.

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<sup>5</sup> We need not set forth formal findings as to the undisputed assertions by Petitioner that the references disclose these limitations of claims 6–9 and 11. *See In re NuVasive, Inc.*, 841 F.3d 966, 974 (Fed. Cir. 2016) (“Although the Board did not make findings as to whether any of the other claim limitations (such as fusion apertures or anti-migration teeth) are disclosed in the prior art, it did not have to: NuVasive did not present arguments about those limitations to the Board. . . . The Board, having found the only disputed limitations together in one reference, was not required to address undisputed matters.”); Paper 14, 8 (emphasizing that “any arguments not raised in the response may be deemed waived”).



The annotated figure depicts Petitioner’s proposed placement of diametrically magnetized magnets next to tissue 8 in Dormer’s arrangement, with the ring magnets surrounding external coil assembly 28 and internal coil assembly 6. Pet. 27. Petitioner contends that such placement of the ring magnets results in the north and south poles of the magnets extending essentially parallel to the skin. *Id.* (citing Ex. 1002 ¶ 67).

Patent Owner argues that Dormer’s axially magnetized magnets include “poles perpendicular to the skin” rather than parallel, and “Goldberg says nothing about the orientation of the magnet’s poles relative to the skin.” PO Resp. 31 (emphasis omitted) (citing Pet. 26; Ex. 2014 ¶ 91). Patent Owner also argues that Dormer fails to depict the orientation of its ring magnet embodiment that Petitioner relies upon in its challenge. *Id.* at 32–33 (citing Ex. 1003, 7:35–36, Fig. 1; Ex. 2014 ¶¶ 92–93).

Petitioner replies that use of the diametric magnetization of Goldberg’s magnets in Dormer’s ring magnet embodiment results in “poles extending essentially parallel” to the skin, and that Patent Owner’s declarant recognized this result. Pet. Reply 10–11 (citing Ex. 1017, 57:20–58:1; Ex. 2014 ¶ 59). Petitioner also argues that Patent Owner improperly attacks the

references individually rather than Petitioner's combination of references. *Id.* at 11–12 (citing PO Resp. 31).

Patent Owner responds that it not only argues that the references each fail to disclose the poles extending essentially parallel to the skin, but that the combination also fails to disclose the limitation. PO Sur-reply 2–3. Patent Owner also argues Petitioner fails to support its argument that Dormer's axial magnets are arranged with their poles perpendicular to the skin, and therefore Dormer's ring magnet's poles would be arranged with its poles parallel to the skin. *Id.* at 3 (citing Pet. Reply 11). Patent Owner contends that Petitioner's declarant testimony does not support Petitioner's position and that Dormer's ring magnet embodiment does not provide adequate guidance. *Id.* at 3–4 (citing Ex. 1017, 56:24–57:19; Ex. 2014 ¶ 92).

We agree with Petitioner that its proposed combination of Dormer and Goldberg discloses a magnet with “poles extending essentially parallel” to the outer surface, i.e., the skin. *See* Pet. 26–27; Ex. 1002 ¶ 67; Ex. 1003, 7:35–36; Ex. 1004, 2:63–65, 3:39–42, Figs. 2, 5. Dormer discloses a ring magnet and Goldberg discloses two diametrically magnetized disc magnets, with the north and south poles on opposite ends. *See* Ex. 1003, 7:35–36; Ex. 1004, 2:63–65, 3:39–42, Fig. 5. Once the diametrical magnetization is applied to Dormer's ring magnets and the magnets placed on either side of the skin as Petitioner proposes, the north and south poles extend essentially parallel to the skin surface as the limitations requires. Pet. 27.

Patent Owner's arguments do not persuade us that Petitioner fails to make an adequate showing here. *See* PO Resp. 31–33. As Petitioner correctly notes, Patent Owner's argument that neither Dormer nor Goldberg



alone discloses the limitation improperly focuses on the references individually rather than Petitioner's proposed combination. *See* Pet. Reply 11–12 (citing *Bradium Techs. LLC v. Iancu*, 923 F.3d 1032 (Fed. Cir. 2019); *In re Keller*, 642 F.2d 413, 425 (CCPA 1981)). Similarly, Patent Owner's focus on non-ring magnet embodiments in Dormer that Petitioner does not rely upon does not address Petitioner's proposed combination. Patent Owner also argues that the combination fails to disclose the limitation, but Patent Owner never argues that Petitioner's proposed combination, as shown in the annotated figure above, fails to disclose magnets with poles extending parallel to the skin. *See* Pet. 27; PO Resp. 32–33. Instead, Patent Owner appears to argue Petitioner makes incorrect assumptions as the basis for its modification of Dormer. PO Resp. 32–33. While such arguments may go to the motivation or justification for the proposed modification, they do not undermine Petitioner's position that the resulting combination, if made as Petitioner proposes, discloses the limitation.<sup>6</sup>

Based on the foregoing analysis of the disputed and undisputed limitations, we find that Petitioner establishes by a preponderance of the evidence that the combination of Dormer and Goldberg discloses all of the limitations of claims 6–9 and 11.

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<sup>6</sup> Although Patent Owner's arguments do not support directly its assertion that the resulting combination fails to disclose any limitations, we also disagree with Patent Owner's argument that Petitioner cites no support as a basis for its proposed modification of Dormer. Petitioner cites (1) the references themselves; (2) credible declarant support; and (3) the deposition testimony of Patent Owner's declarant that Dormer discloses magnets with the pot core parallel to the skin, suggesting that its ring magnet embodiment would be arranged in the same manner. Pet. 26–27 (citing Ex. 1002 ¶ 67; Ex. 1003, 7:35–36; Ex. 1004, 2:63–65, 3:39–42, Figs. 2, 5); Pet. Reply 10–11 (citing Ex. 1017, 57:20–58:1; Ex. 2014 ¶ 59).

*b. The Proposed Combination*

*1) The Parties' Positions*

Petitioner argues that both Dormer and Goldberg disclose implantable devices that employ magnetic coupling, “fall within the field of transcutaneous connecting devices as identified in the preamble of the ’681 patent claims,” and “both references concern magnetic devices and implantable devices.” Pet. 35 (citing Ex. 1003, 1:7–9). Petitioner contends that Dormer discloses all aspects of claims 6–9 and 11 with the exception of whether to orient the poles parallel or perpendicular to the skin, which were well known approaches in the art. *Id.* at 36 (citing Ex. 1002 ¶ 76; Ex. 1010, 22<sup>7</sup>). Petitioner supports its position with reference to a magnet design handbook by Moskowitz<sup>8</sup> that discloses the poles running parallel to the thickness of a ring magnet (axial magnetization) or parallel to the diameter (diametric magnetization). *See id.*; Ex. 1010, 22. Petitioner notes that a “horseshoe magnetization could have been considered” as well, but the simplest configurations Moskowitz discloses would be sufficient to hold one magnet to another. Pet. 36. Petitioner contends that implementing Goldberg’s diametrically magnetized magnets, with the poles lined up parallel to the skin, “would have been one of just a finite number of practical predictable orientations.” *Id.* at 37 (citing Ex. 1002 ¶ 77). Petitioner also argues that the proposed combination merely involves prior art elements “arranged according to known methods to yield predictable results” by

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<sup>7</sup> Petitioner cites to page 25 of Exhibit 1010, but we view that as a typographical error as the image cited appears on page 22 of Exhibit 1010. *See* Ex. 1010, 22.

<sup>8</sup> Moskowitz, Lester R., et al., *Permanent Magnet Design and Application Handbook* (1976) (Ex. 1010, “Moskowitz”).

relying on known “parallel magnetization.” *Id.* at 38 (citing Ex. 1002 ¶¶ 38, 78–80; Ex. 1010, 155; Exs. 1012, 1013).

Petitioner further argues that Dormer provides motivation for diametric magnetization by teaching the use of multiple, oppositely-polarized magnets on each of the internal and external parts to achieve proper predetermined alignment of the parts, and that approach would lead to the diametrically magnetized approach if applied to Dormer’s ring magnet. *Id.* at 39–41 (citing Ex. 1002 ¶¶ 40–41, 81–82; Ex. 1003, 5:21–44, 7:1–29, 7:34–35). Petitioner contends that “[o]rienting the magnetization as taught by Goldberg is further motivated by Dormer’s explanation for achieving a single predetermined alignment.” *Id.* at 41–42 (citing Ex. 1002 ¶¶ 83–84; Ex. 1003, 7:1–5; Ex. 1004, Fig. 5).

Patent Owner makes several arguments against the combination of Dormer and Goldberg. Patent Owner argues that Petitioner’s proposed change in Dormer’s axial design to diametric magnetization across the diameter of its ring magnet “is flawed for at least four reasons.” PO Resp. 34. First, Patent Owner contends that “there were no benefits to making” Petitioner’s proposed change and Petitioner fails to identify a reason for its proposed modification. *Id.* at 34–35. The premise for this argument rests on Patent Owner’s position that Petitioner must first articulate a motivation for choosing Dormer’s ring magnet embodiment over its other embodiments prior to the modification of the axial design. *Id.* at 35 (citing Ex. 2014 ¶¶ 96, 102, 131). As to Petitioner’s argument that preserving a “single predetermined alignment” between the magnets provides a motivation for the combination, Patent Owner argues that Dormer already provides a solution to that problem and Petitioner never identifies any deficiencies in

Dormer's solution. *Id.* at 35–38 (citing Ex. 1003, 5:8–44, 6:9–16, 6:19–28, 6:51–53, 7:5–15; Ex. 2014 ¶¶ 97–102; Ex. 2016, 21:8–22:6, 31:2–8, 57:9–17, 60:18–61:15, 62:9–63:1, 79:25–80:5, 82:12–18, 119:10–14).

Second, Patent Owner contends that “there were significant drawbacks to making the change.” PO Resp. 34. Patent Owner contends that these drawbacks include (1) increasing the size of Dormer's implant; (2) reducing “the attractive force between the internal and external magnets;” (3) increasing the size of the magnets and components to account for the decrease in attraction; and (4) requiring substantial redesign of Dormer necessary to accomplish Dormer's goal of “maximum signal transference.” *Id.* at 39–45 (citing Ex. 2014 ¶¶ 103–129).

Third, Patent Owner argues that Petitioner's ““design choice” argument is based on an over-simplification” that Petitioner's declarant admits is inaccurate. PO Resp. 34. Patent Owner contends that Petitioner improperly assumes that its design choice argument replaces the need to show a motivation to modify Dormer, and improperly interprets the Moskowitz as disclosing three main magnetization options, when it in fact discloses 31 “two-pole magnetization arrangements.” *Id.* at 46–47 (citing Ex. 1010, 22; Ex. 2014 ¶¶ 130–131). If multipole arrangements are included, according to Patent Owner the number of possibilities are “virtually infinite.” *Id.* at 47 (citing Ex. 1010, 21; Ex. 2014 ¶¶ 132, 134). Patent Owner also argues that Petitioner's selection of diametric magnetization from among the possible options makes little sense given the drawbacks of that design. *Id.* at 48–49 (citing Ex. 2014 ¶¶ 136–137).

Fourth, Patent Owner contends that “the length of co-existence of Dormer and Goldberg, and [Petitioner's] own pre-petition statements,

contradict [Petitioner’s] arguments.” PO Resp. 34. According to Patent Owner, the objective evidence, such as the length of time that passed between the publication of Goldberg (1973) and Dormer (1982) before the ’681 patent application was filed, suggests Petitioner’s approach suffers from hindsight and undermines its argument that modifying Dormer involves a simple design choice. *Id.* at 49–50 (citing Ex. 2014 ¶¶ 138–139).

Separately, even assuming a motivation to combine Dormer and Goldberg, Patent Owner contends that a POSA would have no reasonable expectation of success when modifying Dormer as Petitioner proposes. PO Resp. 50–52. According to Patent Owner, Goldberg’s use of the magnets as a wrench focuses on rotation rather than mere retention of a cochlear implant, and rotation of Dormer’s implanted magnet “would create trauma.” *Id.* at 51 (citing 2014 ¶ 140; Ex. 2016, 99:13-100:19). Patent Owner also argues that Moskowitz’s teachings relate to dental prosthetics that use additional means to retain the prosthetic device, and prior art showing poles parallel to the skin still used axial magnets. *Id.* at 51–52 (citing Ex. 2014 ¶¶ 141–143).

Patent Owner raises additional arguments in support of its position that a POSITA “would not have been motivated to consider either of Goldberg’s embodiments.” PO Resp. 52–53 (citing Ex. 2014 ¶ 144). First, Patent Owner argues that Petitioner employs an improper “short-cut” when presuming that those in the field would have knowledge of Dormer and Goldberg. *Id.* at 53–54. According to Patent Owner, Petitioner defines the relevant technical fields too broadly and Petitioner’s own non-analogous art arguments during prosecution of its patents undermine its position. *Id.* at 54–55 (citing Ex. 2014 ¶¶ 145, 147). Second, Patent Owner argues that a

POSITA seeking to modify Dormer would not have looked to Goldberg because neither of Goldberg's two embodiments "are reasonably pertinent to the problems" addressed by the '681 patent. *Id.* at 55 (citing Ex. 2014 ¶ 148). In support of its position, Patent Owner argues that (1) Goldberg's magnets are used for different purposes than Dormer's magnets, and Patent Owner distinguished prior art on the same basis during prosecution of its own patents; (2) Goldberg's first embodiment employs a fundamentally different design than Dormer, with magnets of significantly different size; (3) Goldberg's second embodiment employs a different design that does not use an external magnet; and (4) Petitioner's own statements suggest that it did not consider Goldberg relevant because Petitioner touted its diametric magnet as unique in implantable devices. *Id.* at 55–58 (citing Ex. 2014 ¶¶ 148–153).

In its Reply, Petitioner argues that Goldberg's diametric ring magnets fulfill the requirements of Dormer. Pet. Reply 12. In support of its position, Petitioner notes Dormer's reliance "on placing attractive poles near each other 'so that the magnetic lines of force extend through the intervening tissue' to retain the assemblies in alignment," and Goldberg's similar arrangement in its Figure 5. *Id.* (citing Ex. 1003, 5:28–32; Ex. 1004, 4:63–66). Petitioner also argues that Dormer's ring magnet embodiment provides the starting point for the analysis, and that Patent Owner improperly argues that Petitioner must show that it would have been obvious to go from Dormer's "magnetic slug configuration [in its other embodiments] to a ring magnet." *Id.* at 13–14 (citing Ex. 1002 ¶ 82). As to Patent Owner's argument that Dormer seeks to maximize magnetic attraction, Petitioner argues that Dormer instead seeks to secure the external and internal units

and “axial magnetization has not been shown to be stronger than diametric magnetization.” *Id.* at 14 (citing Ex. 1018 ¶¶ 9–13). According to Petitioner, “[t]he obviousness inquiry has nothing to do with which magnetization method is stronger,” and Petitioner asserts that Patent Owner’s declarant lacks the requisite expertise in magnetics and makes fundamental errors in his analysis of which type of magnetization requires a larger magnet. *Id.* at 14–17 (citing Ex. 1002 ¶¶ 36, 41, 73, 83; Ex. 1018 ¶¶ 3, 6–13, 19–20). As to the difficulty in modifying Dormer, Petitioner argues that any design, whether axially magnetized or a diametrically magnetized ring magnet, must account for the coils and involves a standard design task in this art, and Dormer leaves the engineering details of its ring embodiment out just as in the ’681 patent. *Id.* at 18 (citing Ex. 1018 ¶ 16). As to the number of magnetization options available based on the Moskowitz handbook, Petitioner argues that as a practical matter two to three options exist and Patent Owner’s reference to additional options includes a number of impractical options. *Id.* at 18–19. Petitioner also argues that parallel magnetization was known and would be expected to hold the magnets together, and that Petitioner’s statements in unrelated patent applications do not involve the same issues presented here. *Id.* at 20–22.

In its Sur-reply, Patent Owner argues that Petitioner must provide a reason to start with Dormer’s ring magnet embodiment and then modify it, and Dormer merely describes the ring magnet as feasible, which does not establish motivation to select the embodiment over the other embodiments. PO Sur-reply 4–5. Patent Owner also argues that Petitioner improperly minimizes downsides of a ring magnet or diametric magnetization, and fails to explain why one would depart of the “universally used axially magnetized

holding magnet.” *Id.* at 6–9. Patent Owner further contends that Petitioner fails to cite any benefit of diametric magnetization compared to axial magnetization, and that the costs of that change outweigh any benefits. *Id.* at 10–12. Patent Owner also reiterates its arguments that one looking to modify Dormer would not look to Goldberg and that its declarant’s analysis provides support for its argument that modifying Dormer to include diametric magnetization imposes negative drawbacks. *Id.* at 13–16.

## 2) Discussion

Based on our review of the parties’ arguments and evidence, we are persuaded that Petitioner establishes sufficiently that one of ordinary skill in the art would have been motivated to apply diametric magnetization to Dormer’s ring magnet, resulting in the poles extending parallel to the skin. *See* Pet. 35–43; Pet. Reply 12–20. As an initial matter, we agree with Petitioner that Dormer discloses a ring magnet embodiment and that embodiment provides a proper starting point for its analysis without any requirement that Petitioner first establish a motivation to choose that embodiment over Dormer’s other embodiments. *See* Pet. 13–14; Ex. 1003, 7:30–36. Patent Owner argues that Petitioner “must” articulate a motivation to choose Dormer’s ring magnet embodiment over its other embodiments, but provides no support for such a requirement. PO Resp. 35. Instead, the cases cited by Patent Owner merely address selecting particular references among multiple references, not picking among multiple embodiments within a reference. *See id.* (“*WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1337 (Fed. Cir. 2016) (‘Whether a skilled artisan would be motivated to make a combination includes whether he would select particular references in order to combine their elements.’)”); *id.* at 36 (“But ‘obviousness concerns



whether a skilled artisan not only could have made but would have been motivated to make the combinations or modifications of prior art to arrive at the claimed invention.’ *Belden Inc. v. Berk–Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015).”); *see also* PO Sur-reply 4 (citing *Shire LLC v. Amneal Pharm., LLC*, 802 F.3d 1301, 1308 (Fed. Cir. 2015)<sup>9</sup>).

We also agree with Petitioner that both Dormer and Goldberg are in the same field that includes “transcutaneous connecting devices, magnetic devices and/or implantable devices.” Pet. 35. Patent Owner argues that Petitioner defines the field too broadly by potentially including any kind of medical device, motor, or electronic device, but does not propose its own definition of the field of invention that would not encompass Goldberg. PO Resp. 54. In addition, even if we removed the breadth of Patent Owner’s broadest possible literal reading from Petitioner’s proposal, such that the field was limited to magnetized medical implanted devices, both Dormer and Goldberg still fall within that field. *See id.* Patent Owner’s reliance on Petitioner’s statements in the prosecution of Petitioner’s patent applications does not persuade us that Dormer and Goldberg are not in the same field here, as Patent Owner does not explain adequately the claim limitations and

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<sup>9</sup> Patent Owner first cites *Shire* in its Sur-reply, depriving Petitioner of a chance to respond. Paper 14, 8 (emphasizing that “any arguments not raised in the response may be deemed waived”). In addition, the claims at issue in *Shire* were directed to methods of using amphetamine derivatives, including use of a mesylate salt of L-lysine-d-amphetamine. *Shire*, 802 F.3d at 1304. Patent Owner provides no argument or analysis of *Shire*, or any persuasive reasoning suggesting that the obviousness analysis in the chemical or drug arts, which may involve identification of a motivation to pick a “starting compound” and other issues specific to that art, should be applied in the same way in this case involving magnets in the mechanical art. *See id.* at 1306–08.

prior art at issue in those proceedings and how those statements somehow bind Petitioner here in the context of different claim limitations and prior art. *See id.* at 54–56.

As to the reasons for the combination, Petitioner persuasively articulates its reasoning, supported by credible expert testimony, that (1) Dormer’s cochlear implant includes magnets placed with attractive poles near each other so that the magnetic force extends through the intervening skin tissue; (2) Dormer teaches the benefit of a single, predetermined alignment between the internal and external magnets; (3) Dormer discloses a ring magnet but leaves out details such as how to magnetize the ring magnet; (4) Goldberg discloses a pair of ring magnets with diametric magnetization, and applying diametric magnetization to Dormer’s ring magnet results in the benefit of maintaining a single, predetermined alignment; (5) Moskowitz discloses a finite number of practical magnetization options for use in Dormer’s device, further supporting the use of diametric magnetization as one of the most basic options available; and (6) applying diametric magnetization to Dormer’s ring magnet involves a predictable use of known methods to yield predictable results, with routine design considerations necessary to implement the ring magnet. Pet. 35–42; Pet. Reply 12–14, 18–20; Ex. 1002 ¶¶ 38, 40–41, 76–84; Ex. 1003, 5:21–44, 7:1–29, 7:34–35; Ex. 1004, 2:64–66, 4:63–66, Fig. 5; Ex. 1010, 22, 155; Ex. 1018 ¶¶ 16, 19.

Patent Owner raises a number of additional arguments that we do not find persuasive. For example, Patent Owner argues that there could be no motivation to provide a magnet with a single, predetermined orientation when Dormer’s existing non-ring magnet embodiments already provide that benefit. *See* PO Resp. 35; *see also id.* at 39–41 (arguing that using the ring

magnet over non-ring magnets “undesirably increases the size of Dormer’s implant”). We disagree. Patent Owner’s argument appears to be an extension of its argument that Petitioner must provide a motivation as to why it relies on Dormer’s ring magnet embodiment instead Dormer’s non-ring magnet embodiments, which we rejected above. *See id.* Moreover, Petitioner does not seek to modify Dormer’s non-ring magnet embodiments; it merely seeks to fill in the missing magnetization orientation of the ring magnet embodiment using the diametric magnetization Goldberg discloses for the reasons provided. *See* Pet. 24; Pet. Reply 13–14, 21. Dormer’s disclosure of the benefit of providing a single, predetermined magnet orientation in a non-ring magnet embodiment supports Petitioner’s proposed combination rather than undermines it because the addition of diametric magnetization to Dormer’s ring magnet retains that benefit.

Patent Owner also argues that “changing the magnetization from axial to diametric undesirably reduces the attractive force between the internal and external magnets,” but that argument again misstates Petitioner’s proposal by assuming that the combination requires “changing” from one magnetization orientation to another, when Dormer’s ring magnet does not disclose any magnetization orientation. *See* PO Resp. 41. To the extent that Patent Owner suggests that one of ordinary skill in the art would not choose to use Goldberg’s diametric magnetization because Dormer’s other embodiments use axial magnetization, we disagree. Dormer does not tout the advantages of “axial” magnetization by name and certainly does not teach away from diametric magnetization. The parties dispute, via competing expert testimony, whether axial or diametric magnetization provides stronger attractive force and whether diametric magnetization

would require a larger magnet to overcome any decrease in force. *See, e.g., id.* at 41–44; Pet. Reply 14–17. We need not resolve that dispute because Patent Owner’s briefing does not establish that any alleged decrease in magnetic force impacts the holding force of the magnets in a significant enough manner to require any changes. *See* PO Resp. 41–44. For example, if the diametrically magnetized ring magnet still provides more than enough force to retain Dormer’s cochlear implant in place even if the force drops somewhat, no change in magnet size may be necessary. Similarly, if only a very slight increase in magnet size is required, that change may not meaningfully counsel against the use of diametric magnetization. Without some sense of the scale of the change in magnet strength relative to the force required to provide a functional device, and a sense of the scale of the change in magnet size allegedly required to accommodate the use of diametric magnetization, Patent Owner’s arguments on this point lack sufficient weight to undermine Petitioner’s showing.<sup>10</sup>

Patent Owner also argues that Moskowitz fails to provide a finite number of magnetization options. *See e.g.,* PO Resp. 46–48. We view

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<sup>10</sup> Patent Owner argues that Petitioner’s own patent states that diametric magnetization requires 20–30% more magnet volume than an axially magnetized magnet. *See* PO Resp. 43–44 (citing Ex. 2014 ¶¶ 121–122; Ex. 2023, 3:21–23, 4:4–10; Fig. 3). Even if true, however, that general statement does not address Dormer or Petitioner’s proposed combination, which includes Dormer’s ring magnet with a larger circumference and diameter compared to Dormer’s other, smaller magnets. *See* Pet. Reply 17; Pet. 27 (depicting ring magnet in proposed combination); Ex. 1003, Figs. 2, 5 (depicting non-ring magnet embodiments with smaller diameters). The increased size of Dormer’s ring magnet may already include additional volume compared to Dormer’s axial magnets and no additional increase in size may be necessary, as Patent Owner alleges, when incorporating diametric magnetization.

Petitioner's arguments based on Dormer and Goldberg as sufficient to provide a motivation to add diametric magnetization to Dormer's ring magnet without relying on Moskowitz. Nevertheless, we also agree with Petitioner's position that Moskowitz discloses a finite number of practical magnetization options, including diametric magnetization, which supports the use of diametric magnetization for Dormer's ring magnet. *See* Pet. 36–37; Pet. Reply 18–19; Ex. 1002 ¶¶ 76–77; Ex. 1010, 22. Moskowitz shows twelve different “[s]tandard magnetizing methods” for ring magnets, including axial and diametric magnetization shown as the first two options. *See* Ex. 1010, 22. While we find Petitioner's argument that the axial and diametric options are the most practical here persuasive, even twelve options represent a “finite” number of options in a mechanical art such as magnets, and supports Petitioner's position that choosing one of the options Moskowitz describes as “[s]tandard” in the art as of 1976 supports its obviousness argument. *See* Pet. Reply 18–19; Ex. 1002 ¶ 76.

We find Patent Owner's additional arguments as to Goldberg unavailing. PO Resp. 50–55. Patent Owner contends that Goldberg's use of its magnets for rotation would not be expected to work in Dormer where rotation would create trauma, but Petitioner does not rely on Goldberg for rotation or propose adding rotatable magnets to Dormer. *See* PO Resp. 50–51, 55–56. Petitioner only relies on the diametric magnetization of Goldberg's magnets, as shown in Goldberg's Figure 5. *See* Pet. 26–27; Pet. Reply 21; Ex. 1002 ¶ 67. Further, Patent Owner does not explain adequately how the force required to keep two magnets together through rotation in Goldberg would fail to merely keep the magnets in place and aligned as in Dormer's cochlear implant. *See* PO Resp. 50–51, 55–56.

We have considered Patent Owner’s remaining arguments, but they do not persuade us that Petitioner fails to make an adequate showing as to its proposed combination. For example, we do not view Petitioner’s proposed combination as based on hindsight due to the longtime availability of both Dormer (since 1982) and Goldberg (since 1976) in the art. *See* PO Resp. 49–50. As discussed above, Petitioner articulates reasoning based on the references themselves, rather than hindsight, for the proposed addition of diametric magnetization to Dormer’s ring magnet. We also do not view Petitioner’s proposed combination as “modifying the magnetization orientation” in a way that “would require a substantial redesign of Dormer’s device” as Patent Owner contends. *See id.* at 44–50. Petitioner’s proposal does not modify an existing magnetization orientation of its ring magnet embodiment—Dormer discloses no magnetization orientation for that embodiment. *See* Ex. 1003, 7:35–36. Petitioner also persuasively argues, with support from credible declarant testimony, that placing a ring magnet around a coil as Petitioner proposes does not introduce problems and addressing any implementation issues involves a standard design task. *See* Pet. Reply 18; Ex. 1018 ¶ 16.

Based on the foregoing, we find that Petitioner has proven by a preponderance of the evidence that one of ordinary skill in the art would have been motivated to combine Dormer with Goldberg’s teachings of diametric magnetization in the manner Petitioner proposes for the reasons provided by Petitioner.

*c. Objective Indicia of Nonobviousness*

*1) The Parties' Positions*

Patent Owner argues that objective indicia illustrate the nonobviousness of the challenged claims, including industry praise, commercial success, and proceeding contrary to accepted wisdom. PO Resp. 63–69. As to industry praise, Patent Owner relies on laudatory statements by Petitioner and others when referencing Petitioner's commercial product. *Id.* at 65 (citing Ex. 2014 ¶¶ 168–172). Patent Owner argues that the laudatory statements tout the use of diametric magnets as having a positive impact on patient care and “cutting-edge.” *Id.* at 65–66 (citing Ex. 2017, 4; Ex. 2027; Ex. 2028, 12, 14). Patent Owner also alleges that Petitioner described its device as “revolutionary” and “really adds to the safety.” *Id.* at 66 (citing Ex. 2004, 1, 4; Ex. 2005, 3).

As to commercial success, Patent Owner argues that Petitioner's SYNCHRONY cochlear implant enjoys commercial success and that Petitioner touts the “parallel-to-the-skin magnetization” first disclosed in the '681 patent as the reason for the success. PO Resp. 66–67 (citing Ex. 2014 ¶¶ 173–175; Ex. 2033, 70). Patent Owner also argues that the prominence of diametric magnetization in Petitioner's advertising material links the success to the claimed invention and establishes a nexus. *Id.* at 67–68 (citing Ex. 2005, 1, 3; Ex. 2029, 2; Ex. 2030, 4; Ex. 2031, 5).

As to proceeding against conventional wisdom, Patent Owner argues that prior to the '681 patent, magnets used in the claimed passage-free connections employed axial magnetization in all commercial products. PO Resp. 68–69 (citing Ex. 2005, 1; Ex. 2014 ¶¶ 176–177; Ex. 2019). Patent Owner also argues that “the universal use of axial magnets is found in all

prior art.” *Id.* at 69 (citing Ex. 1003, 5:27–32; Ex. 1009, 2:26–31; Ex. 2001, Fig. 3; Ex. 2018, Fig. 1).

Petitioner argues that its commercial product and its success “is irrelevant to the ’681 patent.” Pet. Reply 3. According to Petitioner, the ’681 patent appears to be a commercial failure, was never commercialized, and the lack of any commercial products on the market employing anything other than axial magnets from 2001 (when the ’681 patent issued) to 2015 confirms the lack of commercial success. *Id.* at 3–4. Petitioner contends that the revolutionary success of its product is due to the fact that it was the first FDA-approved cochlear implant for use in “a 3.0 Tesla MRI.” *Id.* at 4–5 (citing Ex. 2003, 1:57-60; Ex. 2004, 1; Ex. 2005, 2). Petitioner portrays the ability of the magnet in its SYNCHRONY product to freely rotate to neutralize magnetic forces as the key to its success. *Id.* at 5 (citing Ex. 2005, 2). Petitioner further argues that Patent Owner crops quotes from the literature in an effort to suppress the importance of the rotatability in Patent Owner’s products, which undermines Patent Owner’s industry praise and commercial success arguments. *Id.* at 5–6 (citing Ex. 2020, 3). Petitioner contends that the elongated magnet in a fixed position the ’681 patent discloses would not provide the rotatability necessary to achieve success. *Id.* at 6–7 (citing Ex. 1017, 72:18–73:7, 87:19–23, 97:24–98:9).

As to nexus, Petitioner argues that Patent Owner fails “to identify which, if any, claims correspond” to the SYNCHRONY product and contends that none of the claims read on the product. Pet. Reply 8 (citing Ex. 1017, 91:13–15). Petitioner also argues that Patent Owner fails to establish that any claims are coextensive with Petitioner’s product, and that the rotatability that drives the success of Petitioner’s product “is nowhere



contemplated or suggested by the '681 patent disclosure of an elongated behind-the-ear magnet.” *Id.* at 8–9.

As to departing from accepted wisdom, Petitioner argues that the conventional wisdom was to use magnets to retain the external part of a cochlear implant as Dormer teaches, and that magnetic orientation “was of no consequence.” Pet. Reply 10. According to Petitioner, Moskowitz shows diametric magnetization and other art discloses parallel-to-the-skin magnetization in a cochlear implant. *Id.* (citing Ex. 1002 ¶ 38; Ex. 1010, 81, Fig. 9-21; Ex. 1013; Ex. 1018 ¶¶ 12, 17). Petitioner contends that although the approach of “the '681 patent may have diverted from a popular commercial practice, it did not achieve any notable advantages and as far as we know it was not commercialized.” *Id.*

In its Sur-reply, Patent Owner argues that Petitioner concedes that the conventional wisdom for commercial products was to employ axial magnets, and the '681 patent diverted from that practice. PO Sur-reply 17. Patent Owner also argues that magnetic orientation was not “of no consequence” as Petitioner alleges, and if so, one would expect cochlear implants employing diametric magnetizations, which did not occur prior to the '681 patent. *Id.* at 18 (citing Ex. 2005, 1; Ex. 2014 ¶¶ 47, 176–177; Ex. 2019). As to commercial success and industry praise, Patent Owner argues that Petitioner attributes at least part of its success to the parallel-to-the-skin magnetic orientation. *Id.* at 19 (citing Ex. 2004, 4; Ex. 2005, 3; Ex. 2020, 3; Ex. 2029, 2; Ex. 2030, 4). As to nexus, Patent Owner argues that Petitioner and others “credited *both* the magnetization *and* the rotatability of the magnet, with the magnetization commonly identified first and foremost.” *Id.* at 20 (citing Ex. 2004; Ex. 2020, 3). Patent Owner contends that even if MRI compatibility

is the primary driver of SYNCHRONY’s success, the parallel-to-the-skin magnetization ‘is one of the enabling links [] to achieve compatibility with MRI.’” *Id.* at 21 (quoting Ex. 1017, 97:24–98:9).

2) *Discussion*

We first address the nexus between the claimed invention and Patent Owner’s objective indicia of nonobviousness and then the strength of Patent Owner’s objective indicia evidence.

Patent Owner bears the burden of establishing a nexus. *See Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019). “[A] patentee is entitled to a rebuttable presumption of nexus between the asserted evidence of secondary considerations and a patent claim if the patentee shows that the asserted evidence is tied to a specific product and that the product ‘is the invention disclosed and claimed.’” *Id.* (quoting *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988)).

Patent Owner fails to meet its burden of establishing a nexus. As an initial matter, Patent Owner does not purport to seek a presumption of a nexus because Patent Owner provides no analysis of the challenged claims with respect to Petitioner’s product at all, much less an analysis purporting to establish that the product is coextensive with the claims. *See PO Resp.* 63–69. In addition, although nexus can be established absent a presumption, Patent Owner’s failure to map the claim limitations on to Petitioner’s product, and Petitioner’s undisputed assertion that the challenged claims do not cover its product, undermine any assertion of a nexus. *See Pet. Reply* 8. Further, Petitioner persuasively argues that unclaimed features in its product, including the rotatability of its magnet enabling use of its product within an

MRI, drive the industry praise and commercial success of the product. *See* Pet. Reply 5–7; Ex. 2004, 1; Ex. 2005, 2; Ex. 2020, 3. Although Patent Owner contends that diametric magnetization may partially enable the compatibility with MRI, the evidence does not explain how this is the case or undermine Petitioner’s position that the praise and success are largely due to unclaimed aspects of Petitioner’s product. *See* PO Sur-reply 21 (citing Ex. 2004, 2–4) (quoting Ex. 1017, 97:24–98:9). Under these circumstances, where Patent Owner provides no analysis of the product with respect to the challenged claims and the product literature merely touts one limitation in the challenged claims as significant while other unclaimed product features are critical to the success of the product, we find that Patent Owner has not established a nexus to the claimed invention.

For the sake of completeness, we briefly address Patent Owner’s allegations relating to objective indicia based on the assumption that Patent Owner established a nexus. As to industry praise and commercial success, we find the evidence relatively weak for the same reasons we find that Patent Owner fails to establish a nexus, i.e., Petitioner persuasively argues that the praise and success were largely due to unclaimed product features. While diametric magnetization may play some undefined role in the success of the product and its use in MRI machines, the record does not indicate its importance approaches that of the rotatable magnet, which the claims do not require and the ’681 patent does not discuss. As a result, we find the evidence of industry praise and commercial success relatively weak.

As to proceeding against conventional wisdom, Patent Owner persuasively argues that commercial products employed axial magnets prior to the ’681 patent, but Patent Owner incorrectly argues that “all prior art”

also employed axial magnets. *See* PO Resp. 68–69. Moskowitz, for example, describes diametric magnetization as one of the “[s]tandard magnetizing methods” for use in medical implants as of 1976. Ex. 1010, 22. Nevertheless, due to the lack of cochlear implant art employing diametric magnetization prior to the ’681 patent, we find a moderate level of evidence supporting Patent Owner’s argument that the ’681 patent proceeding against conventional wisdom.

Based on the foregoing, we find that Patent Owner fails to establish a nexus and therefore fails to establish that the objective indicia support a finding of nonobviousness. Even if Patent Owner established a nexus, the objective evidence is relatively weak to moderate and would not weigh heavily in favor of nonobviousness as Patent Owner contends.

*d. Conclusion as to Claims 6–9 and 11*

“Once all relevant facts are found, the ultimate legal determination [of obviousness] involves the weighing of the fact findings to conclude whether the claimed combination would have been obvious to an ordinary artisan.” *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1361 (Fed. Cir. 2017). Above, based on the full record before us, we provide our factual findings regarding (1) the level of ordinary skill in the art, (2) the scope and content of the prior art, (3) any differences between the claimed subject matter and the prior art; and (4) objective indicia of nonobviousness.

In particular, we find that (1) Petitioner’s proposed level of ordinary skill in the art is consistent with the art of record; (2) the combination of Dormer and Goldberg discloses all the limitations of claims 6–9 and 11; (3) one of ordinary skill in the art would have been motivated to combine Dormer and Goldberg in the manner Petitioner proposes; and (4) Patent

Owner fails to establish a nexus, and even assuming a nexus, the objective evidence is relatively weak to moderate. Weighing these underlying factual determinations, a preponderance of the evidence persuades us that claims 6–9 and 11 of the '681 patent are unpatentable over the combination of Dormer and Goldberg.

*E. Obviousness of Claim 12 Based on Dormer, Goldberg, and Ely*

Petitioner challenges claim 12 under 35 U.S.C. § 103 based on Dormer, Goldberg, and Ely. Pet. 43–50. For these challenges, Petitioner cites to the asserted references and the Trumper Declaration. *Id.*

Ely discloses a hearing aid with a directional microphone system. Ex. 1006, code (57). Ely's microphone system 14 includes a “front-to-back sound conduit 21” defined by microphone casing 24. *Id.* at 3:12–16, Fig. 1.

Petitioner asserts that the Dormer/Goldberg combination discloses all of the limitations of claim 12 with the exception of the final limitation requiring “at least one conduit extending through the external part.” Pet. 43–47. As to the conduit limitation, Petitioner relies on Ely's disclosure of a conduit extending through its hearing aid. *Id.* at 47 (citing Ex. 1006, 3:13–16, 5:14–15). Petitioner also argues that one of ordinary skill in the art would have reasons to combine Ely with the Dormer/Goldberg combination. *Id.* at 48–50 (citing Ex. 1002 ¶¶ 87–89; Ex. 1006, 1:45–47, 2:30–31, 3:12–16). Patent Owner does not address or dispute Petitioner's arguments and evidence as to claim 12 and Ely, except to argue that reliance on Ely does not cure any of the alleged deficiencies in Petitioner's challenge based on Dormer and Goldberg. PO Resp. 58.

Based on the foregoing, we find that (1) Petitioner's proposed level of ordinary skill in the art is consistent with the art of record; (2) the

combination of Dormer, Goldberg, and Ely discloses all the limitations of claim 12; (3) one of ordinary skill in the art would have been motivated to combine Dormer, Goldberg, and Ely in the manner Petitioner proposes; and (4) Patent Owner fails to establish a nexus, and even assuming a nexus, the objective evidence is relatively weak to moderate. Weighing these underlying factual determinations, a preponderance of the evidence persuades us that claim 12 of the '681 patent is unpatentable over the combination of Dormer, Goldberg, and Ely.

*F. Anticipation of Claim 9 Based on Hooven*

Petitioner challenges claim 9 under 35 U.S.C. § 102(b) based on Hooven. Pet. 8, 50–53. For these challenges, Petitioner cites to the asserted references and the Trumper Declaration. *Id.* at 50–53.

We need not reach Petitioner's additional challenge to claim 9 based on Hooven because we already found that Petitioner establishes that claim 9 would have been obvious based on Dormer and Goldberg.

*G. Petitioner's Motion to Exclude*

Petitioner moves to exclude Exhibits 2017, 2019, 2020, 2025, 2027–2031 and 2033. Paper 30, 1. Although we may have explicitly or implicitly referenced these exhibits when recounting or addressing the parties' arguments, we do not rely on any of the exhibits as a basis to make any findings adverse to Petitioner in this Decision. For example, we considered several of the exhibits as part of Patent Owner's objective indicia arguments, and found the arguments lacking even with those exhibits in evidence. We, therefore, dismiss Petitioner's Motion to Exclude as moot.

### CONCLUSION<sup>11</sup>

A summary of our conclusions appears in the chart below:

<b>Claim(s)</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Claims Shown Unpatentable</b>	<b>Claims Not Shown Unpatentable</b>
6–9, 11	103(a)	Dormer, Goldberg	6–9, 11	
12	103(a)	Dormer, Goldberg, Ely	12	
9 <sup>12</sup>	102(b)	Hooven		
<b>Overall Outcome</b>			6–9, 11, 12	

### ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 6–9, 11, and 12 of U.S. Patent No. 6,761,681 B2 have been shown, by a preponderance of the evidence, to be unpatentable;

FURTHER ORDERED that Petitioner’s Motion to Exclude is *dismissed*; and

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<sup>11</sup> Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

<sup>12</sup> Because we already determined that all of the challenged claims are unpatentable, we did not reach whether claim 9 is also unpatentable based on Hooven.

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FURTHER ORDERED that, because this is a Final Written Decision, the parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.



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