Trials@uspto.gov
571-272-7822

Paper 8
Date: March 9, 2022

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LUMENIS BE LTD.,[1]
Petitioner,

v.
BTL HEALTHCARE TECHNOLOGIES A.S.,
Patent Owner.

IPR2021-01280
Patent 10,478,634 B2

Before BARBARA A. PARVIS, ZHENYU YANG, and DAVID COTTA, *Administrative Patent Judges*.

PER CURIAM

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

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[1] We have changed the case caption to reflect that Lumenis Be Ltd. is the successor-in-interest of Lumenis Ltd. Paper 4, 1.

I. INTRODUCTION

Lumenis Be Ltd. ("Petitioner") filed a Petition (Paper 2 ("Pet.")), seeking an *inter partes* review of claims 9–22 of U.S. Patent No. 10,478,634 B2 (Ex. 1001, "the '634 Patent"). BTL Healthcare Technologies A.S. ("Patent Owner") filed a Preliminary Response. Paper 7 ("Prelim. Resp.").

We have authority under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted "unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a).

For the reasons provided below, we determine Petitioner has not demonstrated a reasonable likelihood that it would prevail with respect to at least one claim challenged in the Petition. Accordingly, we deny institution of an *inter partes* review.

A. Related Matters

According to the parties, the '634 patent was the subject of *BTL Industries, Inc. v. Allergen Ltd.*, Case No. 1-19-cv-02356 (D. Del.) and *Certain Non-Invasive Aesthetic Body Contouring Devices, Components Thereof, and Methods of Using the Same, Inv.* No. 337-TA-1219 (ITC). Pet. 3; Paper 3, 1–2. The parties inform us that those cases have been stayed or closed due to settlement. Pet. 3; Paper 3, 1–2. The '634 patent was also the subject of *Allergan, Inc. et al v. BTL Medical Technologies SRO et al*, IPR2021-00312 (settled prior to institution decision). Pet. 3.

Petitioner has concurrently filed a petition in IPR2021-01273, challenging claims 1–8 and 23–30 of the '634 patent. Pet. 3; Paper 3, 1.

Petitioner also filed petitions for *inter partes* review of several related patents. Paper 3, 1.

B. The '634 Patent and Related Background

The '634 patent relates to "methods using the influence of magnetic and induced electric field on biological structure." Ex. 1001, 1:53–55. The '634 patent states that "[t]he magnetic field is time-varying and high powered[, and] therefore the method is based on a value of magnetic flux density sufficient to induce at least muscle contraction." *Id.* at 1:55–58.

The '634 patent describes aesthetic medicine as including "all treatments resulting in enhancing a visual appearance and satisfaction of the patient." *Id.* at 1:65–67. According to the '634 patent, prior art magnetic methods were limited in key parameters, and thus, did not achieve satisfactory results. *Id.* at 2:32–3:7. The '634 patent discloses a need for "new aesthetic treatment methods providing improved results in shorter time periods." *Id.* at 3:8–9.

The '634 patent discloses methods and devices that "produce a time varying magnetic field for patient treatment which better optimizes energy use, increases the effectiveness of the treatments and provide a new treatment." *Id.* at 3:13–16. A circuit for providing high power pulses to the stimulating magnetic field generating device is shown in Figure 5b, reproduced below.

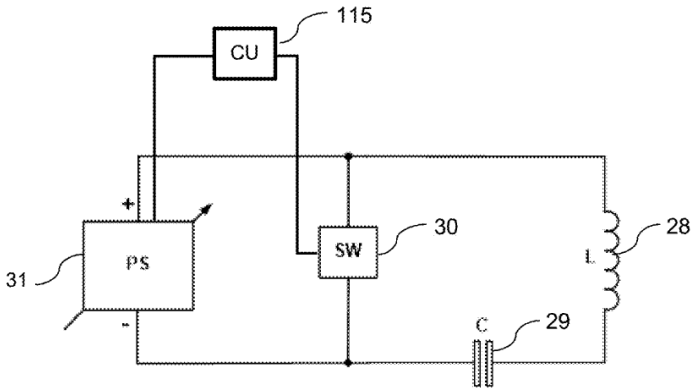

Figure 5b

Figure 5b, above, shows a circuit for providing high power pulses for improved function of a treatment device. *Id.* at 12:35–36. It includes magnetic field generating device 28 and energy storage device 29 connected in series and disposed in parallel to switch 30. *Id.* at 12:36–39. To provide an energy pulse, controlled shorting of energy source 31 takes place through the switch 30. *Id.* at 13:40–42. Energy source 31 or switch 30, or alternately both, may be regulated by control 25 unit 115. *Id.* at 12:47–50.

An exemplary embodiment of a magnetic treatment device including two independent magnetic field generating circuits is shown in Figure 12, reproduced below.

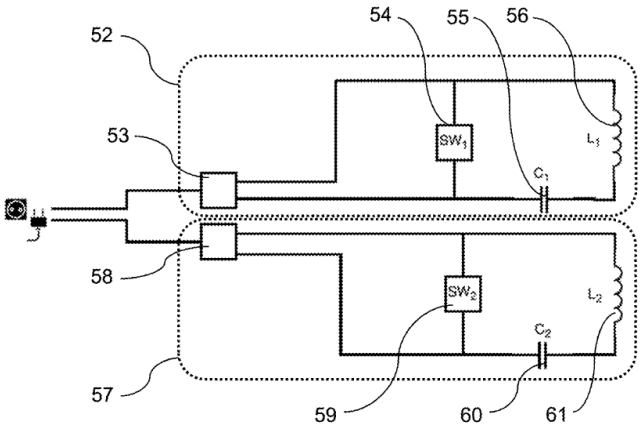

Figure 12

Figure 12, above, shows an embodiment of the magnetic treatment device including two independent magnetic field generating circuits, 52 and 57. *Id.* at 16:7–24. Magnetic field generating circuit 52 includes energy source 53, switching device 54, energy storage device 55, and magnetic field generating device 56. *Id.* at 16:9–12. Magnetic field generating circuit 57 includes energy source 58, switching device 59, energy storage device 60, and magnetic field generating device 61. *Id.* at 16:12–14.

The '634 patent discloses methods for applying a magnetic field to the buttocks or abdomen. *See id.* at 33:14–27, 53–62, Figs. 15, 16.

C. Illustrative Claims

Among the challenged claims, claims 9 and 16 are independent. They are illustrative of the claimed subject matter and are reproduced below.[2]

> 9. [9.pre] A method for toning muscles or muscle shaping of a patient using time-varying magnetic fields, the method comprising:
>
> [9.a] placing a first applicator comprising a first magnetic field generating coil in contact with the patient's skin or clothing at a body region including a first muscle;
>
> placing a second applicator comprising a second magnetic field generating coil in contact with the patient's skin or clothing at the body region including a second muscle, wherein the first and second muscles are a first buttock and a second buttock or a right side of an abdomen and a left side of the abdomen;
>
> [9.b] providing energy to the first and the second magnetic field generating coils each having an inductance in a range of 1 nH to 50 mH and each configured to generate a time-varying

[2] For ease of reference, Petitioner's designations to reference the claim limitations are set forth in brackets. Herein, we refer to the claim limitations using Petitioner's designations.

magnetic field with an impulse duration in a range of 3 μs to 3000 μs; and;

[9.c] applying the time-varying magnetic fields to the first and second muscles, respectively, in the body region of the patient in two trains, wherein a first train causes a contraction of the patient's muscles and a relaxation of the patient's muscles following the contraction of the patient's muscles.

Ex. 1001, 96:48–97:3.

16. [16.pre] A method for body shaping using time-varying magnetic fields applied to a patient's muscle, the method comprising:

[16.a] placing an applicator including a magnetic field generating coil in contact with a body region of a patient, wherein the coil is oil-cooled;

[16.b] attaching the applicator to the patient by a length adjustable positioning member;

[16.c] charging an energy storage device;

[16.d] switching a switching device;

[16.e] discharging the energy storage device to the magnetic field generating coil in order to generate the time-varying magnetic field;

[16.f] causing the magnetic field generating coil to generate the time-varying magnetic field with a magnetic flux density in a range of 0.1 Tesla to 7 Tesla;

[16.g] applying the time-varying magnetic field with a magnetic flux density sufficient to cause a contraction of the patient's muscle within the body region in order to cause a repetitive contraction of the patient's muscle; and

[16.h] assembling a plurality of magnetic pulses into a train lasting a first time period lasting between 1 second and 30 seconds; wherein the train is followed by a second time period in which no time-varying magnetic field is applied to the patient's muscle.

Id. at 97:27–53.

D. Asserted Challenges to Patentability

Petitioner asserts the following challenges to patentability:

Claims Challenged	35 U.S.C. §[3]	Reference(s)
9–22	103	Simon[4]
9–22	103	Burnett '870,[5] Magstim[6]
9–22	103	Simon, Burnett '870

Petitioner relies on the declaration of Dr. Marom Bikson as support for its Petition. Ex. 1002.

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, we construe a claim term "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. § 42.100(b) (2020). Under that standard, the words of a claim "are generally given their ordinary and customary meaning," which is "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc).

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[3] The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103, effective March 16, 2013. Because the '634 patent has an effective filing date after March 16, 2013, the AIA version of § 103 applies.
[4] U.S. 2015/0165226 A1, published June 18, 2015 (Ex. 1004, "Simon").
[5] U.S. 2014/0148870 A1, published May 29, 2014 (Ex. 1005, "Burnett '870").
[6] Hovey, Chris and Jalinous, Reza, *The Guide to Magnetic Stimulation*, The Magstim Company Limited (July 21, 2006) (Ex. 1006, "Magstim").

Claim terms need only be construed to the extent necessary to resolve the controversy. *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011). The parties do not propose any claim construction. Pet. 9; *see generally*, Prelim. Resp. On this record and for purposes of this Decision, we see no need to construe any term expressly.

B. Alleged Obviousness over Simon

Petitioner asserts that claims 9–22 of the '634 patent would have been obvious over Simon. Pet. 9–30. Based on this record, and for at least the following reasons, we determine Petitioner has not established a reasonable likelihood that it would prevail in this assertion.

1. Simon

Simon relates to delivery of energy impulses (and/or fields) to bodily tissues for therapeutic purposes. Ex. 1004 ¶ 2. Simon describes toroidal magnetic stimulation devices, as well as to non-invasive methods for treating medical conditions using energy that is delivered by such devices. *Id.* Simon's device is shown in Figure 1, reproduced below.

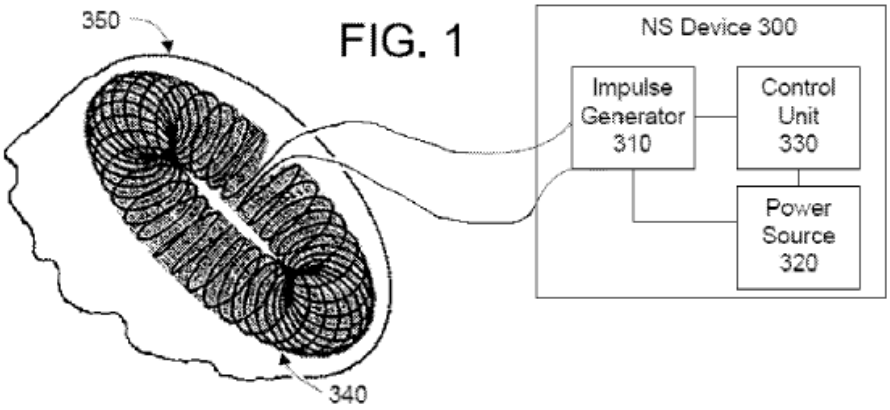

Figure 1 is a schematic diagram of nerve stimulating/modulating device 300 for delivering impulses of energy to nerves for the treatment of

medical conditions. *Id.* ¶ 54. It shows that stimulating device 300 includes impulse generator 310, power source 320, and control unit 330, respectively. *Id.* Impulse generator 310 is connected by wires to toroidal-shaped magnetic stimulator coil 340 located within electrically conducting medium 350. *Id.* ¶¶ 54, 56.

2. Analysis

Both claims 9 and 16, the only independent claims challenged, require applying magnetic fields to muscles within a patient's body. *See* Ex. 1001, 96:65–67 (claim limitation [9.c]), 97:28–38 (claim limitation [16.g]).

Petitioner asserts that Simon teaches "[m]agnetic stimulation devices and methods." Pet. 14 (citing Ex. 1004, Title, Abstract, ¶ 197); *see also id.* ("**Simon** discloses an 'apparatus' that induces a 'time-varying magnetic field' to apply 'energy' to a target region within a 'patient.'") (citing Ex. 1004, Abstract, ¶¶ 15, 23–24, 53).[7] We are not persuaded.

Although Simon designates its devices as magnetic stimulation devices (Ex. 1004, Title, ¶ 2), it explains that

> the magnetic field of a toroidal magnetic stimulator remains essentially within the toroid, and that when referring to this device as a magnetic stimulator, it is in fact the electric fields and/or currents that are induced outside the stimulator that produce an effect in the patient, *not the magnetic field*.

Id. ¶ 37 (emphasis added). Indeed, Simon emphasizes that "the magnetic stimulation device disclosed herein is not intended to generate a magnetic

[7] Petitioner also points to other teachings, including details relating to the operation of Simon's device shown in Figure 1, which are not as pertinent to the question before us. *See*, *e.g.*, Pet. 19–20 (citing, *e.g.*, Ex. 1004 ¶¶ 60, 61, Fig. 2).

field within bodily tissue, so it would produce its effect through a different mechanism than conventional magnetic stimulation." *Id.* ¶¶ 122, 140.

Simon teaches that the magnetic field of its device may be produced by a coil other than a toroid. *Id.* ¶ 82. The magnetic field outside the coil, however, falls rapidly as a function of distance from the coil. *Id.*; *see also id.* ¶ 25 ("[E]ach coil being housed within an enclosure [is] configured to substantially confine the magnetic field therein."). According to Simon, "[s]uch non-toroidal windings may be used in the present invention if they are backed away and/or oriented relative to the patient's skin in such a way that the magnetic field that is produced by the device does not effectively penetrate the patient's tissue." *Id.* ¶ 82. Alternatively, Simon teaches "*magnetic shielding* . . . may be interposed between the patient and coil of its device in such a way that the magnetic field that is produced by the device does not effectively penetrate the patient's tissue." *Id.*; *see also id.* ¶ 24 (stating the magnetic field "is located essentially entirely exterior to an outer skin surface of the patient"); ¶ 27 (the same).

Because Simon does not teach applying magnetic fields to muscles within a patient's body, which is required in independent claims 9 and 16, we determine that Petitioner has not demonstrated a reasonable likelihood that it would prevail in showing that claims 9 and 16 would have been obvious over Simon.

Each of claims 10–15 depends from claim 9, and each of claims 17–22 depends from claim 16. Petitioner's arguments and evidence for dependent claims 10–15 and 17–22 do not remedy the deficiencies discussed with respect to claims 9 and 16. *See* Pet. 24–30. Thus, we determine that

Petitioner has not demonstrated a reasonable likelihood that it would prevail in showing that claims 10–15 and 17–22 would have been obvious over Simon either.

C. Alleged Obviousness over Burnett '870 and Magstim

Petitioner asserts that claim claims 9–22 of the '634 patent would have been obvious over the combination of Burnett '870 and Magstim. Pet. 30–54. Based on this record, and for at least the following reasons, we determine Petitioner has not established a reasonable likelihood that it would prevail in this assertion.

1. Prior Art Disclosures

a. Burnett '870

Burnett '870 relates to a system for electromagnetic induction therapy that generates a magnetic field focused on a target nerve, muscle, or other body tissue. Ex. 1005 ¶ 21. An embodiment of Burnett '870's system is shown in Figure 34 reproduced below.

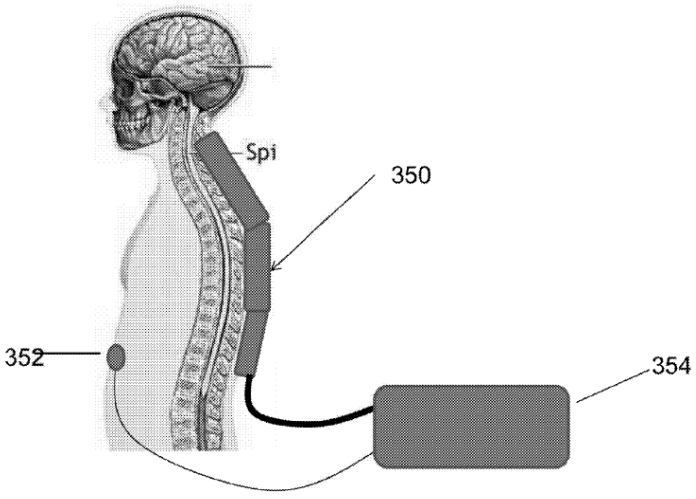

Figure 34 is a profile view of the upper half of a human body with multiple back applicators 350, a sensor 352, and a logic controller 354. *Id.* ¶ 209. Burnett '870 teaches that applicators 350 may include multiple coils

that are fired sequentially. *Id.* ¶ 209. In another embodiment, Burnett '870 teaches the applicator may include several coils that are pulsed intermittently. *Id.* ¶ 210.

Burnett '870 also teaches that its device may be shaped as various body worn ergonomic applicator garments, as shown in Figures 9A–9D. *Id.* ¶ 113.

b. Magstim

Magstim describes techniques of magnetic stimulation for clinical applications. Ex. 1006, 1.[8] Magstim illustrates its magnetic stimulator in Figure 2, reproduced below.

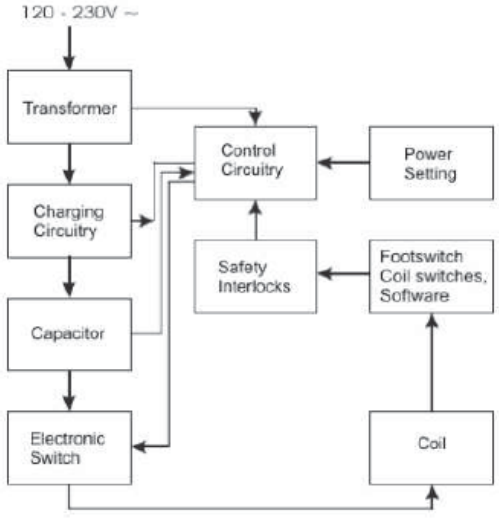

Figure 2: Block diagram of the Magstim 200[2] monophasic stimulator

Figure 2 above is a block diagram of the Magstim Model 200 monophasic stimulator. *Id.* at 4. Magstim teaches that the transformer charges the capacitor under the control of a microprocessor. *Id.* The

[8] We cite to the original page numbers in Magstim, and not page numbers added by Petitioner.

capacitor is connected to the coil via an electronic switch when the user wishes to apply the stimulus. *Id.*

Magstim's coil is illustrated in Figure 3, reproduced below.

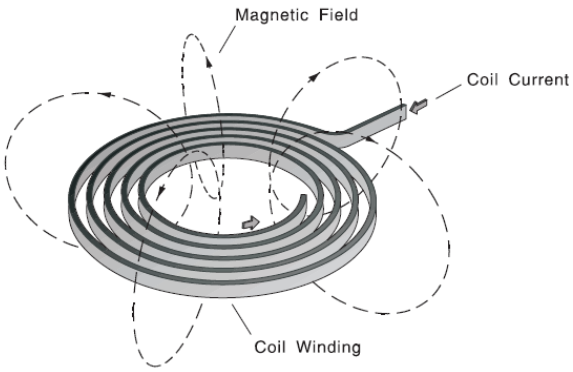

Figure 3 above illustrates a circular coil winding showing the lines of force generated when current flows through the winding. *Id.* at 5. Magstim teaches that the Magstim 200 is supplied with a single circular coil or a double coil shaped as a butterfly or figure of eight. *Id.* at 5, 9. Double coils use two windings, normally placed side by side. *Id.*

2. Analysis

a. Claims 9–15

Each of claims 9–15 requires two applicators. Ex. 1001, 96:51–59 (limitation [9.a]). Petitioner asserts that Burnett '870 teaches multiple applicators. Pet. 38–39 (citing Ex. 1005, Abstract, ¶ 114, Fig. 9B). Specifically, Petitioner argues "Figure 9B illustrates two applicators, each with a set of coils 106, disposed within an 'abdominal garment' covering and treating left and right sides of a patient's buttocks/abdomen." *Id.* at 39.

Figure 9B of Burnett '870 is reproduced below.

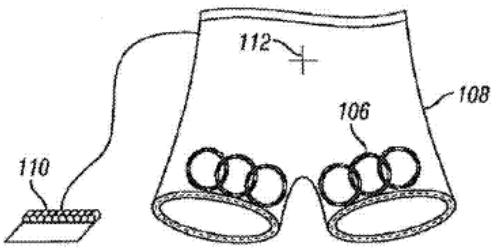

FIG. 9B

Figure 9B above illustrates shorts 108, which is "an abdominal garment" with coils 106 disposed therein. *Id.* ¶ 114. Coils 106 are connected to a logic controller (not shown) by a connector 110**.** *Id.*

On this record, it is not clear what Petitioner regards as an applicator in Burnett '870's Figure 9B. According to Petitioner, the applicators are "disposed within" the abdominal garment, and thus, are not the garment itself. Pet. 39.

In addition, the Petition makes clear that the applicators are not the coils themselves either. In particular, the Petition separately identifies a "coil" and an "applicator" as exemplary structure in Burnett '870 corresponding to the claimed structures. *Id.* at 38. Indeed, according to Petitioner,

> Burnett-'870 discloses placing a first applicator (***e.g., "applicator"***) comprising a magnetic field generating coil (***e.g., "coil"***) in contact with a patient's skin or clothing at a body region of the patient . . . placing a second applicator (***e.g., "applicator"***) comprising a second magnetic field generating coil (***e.g., "coil"***) in contact with the patient's skin or clothing at the body region.

Id. (emphases altered); *see also id.* at 39 ("Figure 9B illustrates ***two applicators, each with a set of coils*** 106") (emphasis added).

Petitioner's expert, Dr. Bikson, also suggests that the coils are not themselves the applicator. Ex.1002 ¶ 209 (testifying that adjustable attachment components "permit the applicators (***and their corresponding coils***) to be independently positioned") (emphasis added); ¶ 236 (testifying that Burnett '870 discloses that "'[o]ne or more ***ergonomic or body contoured applicators***' are used, and '[t]he applicators include one or more conductive coils'"); ¶ 237 (testifying that "Figure 9B . . . illustrates two applicators with two set[s] of coils").

The ambiguity as to what structure in Burnett '870 Petitioner identifies as corresponding to the claimed applicators is problematic because, in this *inter partes* review, 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). On this record, Petitioner has not met that burden.

Moreover, for the reasons explained below, we find persuasive Patent Owner's argument that shorts 108 is a single applicator garment. *See* Prelim. Resp. 50.

According to Burnett '870,

> Each of the wraps of FIGS. 9A-9D corresponds to a coil wrap, into which a body part may be placed. These garments contain one or more sensors (not shown) that provide feedback to a logic controller (also not shown), or sensors may be applied separately from those garments. Systems may also be included for reversibly or irreversibly locking the coils within *the applicator*.

Id. ¶ 113 (emphasis added). In view of this teaching, as well as others discussed below, we agree with Patent Owner that Burnett '870 "describes

each of its body applicator garments—including shorts 108—as a *single* applicator." Prelim. Resp. 49 (citing Ex. 1005 ¶ 113).

Patent Owner's argument is supported by Burnett '870's other disclosures. For example, when describing other garment variations with embedded coils, Burnett '870 states that "[e]ach garment and *applicator* may also utilize the locking, targeting coil feature described previously, without requiring the use of any sensing components after a proper positioning of the coils in relation to the target nerve or *nerves* has been established." Ex. 1005 ¶ 115 (emphases added). Thus, we agree with Patent Owner that Burnett '870's single applicator garment can concurrently target multiple nerves or body regions. Prelim. Resp. 50. This supports Patent Owner's argument that shorts 108, although having two sets of coils 106, is a single applicator targeting a patient's right and left thigh areas. *Id.*

In addition, Burnett '870 teaches that in shorts 108, coils 106 are "connected to a logic controller (not shown) by a connector **110**." Ex. 1005 ¶ 114. It also teaches "[a] marking **112** may be added on one side of shorts **108** to indicate wrap orientation." *Id.* Patent Owner emphasizes that shorts 108 has a single controller and a single current, as well as a single marking used to guide a patient when wearing shorts 108. Prelim. Resp. 50. In view of the additional evidence of common structural and operational features, we agree with Patent Owner shorts 108 is a single applicator.

Because claim 9 requires two applicators, but the embodiment in Burnett '870 that Petitioner relies on as teaching this limitation (shorts 108 shown in Figure 9B) only has a single applicator, we conclude that Petitioner has not demonstrated a reasonable likelihood that it would prevail in

showing that claim 9 would have been obvious over the combination of Burnett '870 and Magstim.

Each of claims 10–15 depends from claim 9. Petitioner's arguments and evidence for dependent claims 10–15 do not remedy the deficiencies discussed with respect to claims 9 and 16. *See* Pet. 49–51. Thus, we determine that Petitioner has not demonstrated a reasonable likelihood that it would prevail in showing that claims 10–15 would have been obvious over Burnett '870 and Magstim either.

b. Claims 16–22

Independent claim 16 recites oil-cooling the magnetic field generating coil. Ex. 1001, 97:30–32 (limitation [16.a]). Petitioner argues Burnett '870 teaches "it was known to cool the coils by direct contact with a liquid coolant to prevent overheating." Pet. 43 (citing Ex. 1005 ¶¶ 210, 215, 235). this limitation. According to Petitioner, Burnett '870 "leaves it to POSITAs to choose the liquid coolant, and oil was known in the art for cooling." *Id.* (citing Ex. 1002 ¶¶ 84–88, 260–269; Ex. 1008, 3:14–16; Ex. 1010 ¶ 71).

Patent Owner does not dispute that it was known to cool the coils by direct contact with a coolant or that oil was known as one such coolant. Prelim. Resp. 51–56 (addressing Petitioner's evidence with respect to limitation [16.a]). Instead, Patent Owner argues that Petitioner does not explain how an ordinarily skilled artisan would have modified the embodiment of Burnett '870's Figure 9B, which shows an applicator garment (shorts 108), to incorporate the cooling capabilities from Burnett '870's applicator casing embodiments. *Id.* at 53. Based on the current record, we agree with Patent Owner that Petitioner has not explained persuasively

how cooling would have been provided in the embodiments of Burnett '870's Figure 9A–9D.

Petitioner relies on Figure 9B as teaching "placing an applicator including a magnetic field generating coil in contact with a body region of a patient," as recited in claim 16. Pet. 38–39, 43. For ease of reference, Figure 9B of Burnett '870 is, again, reproduce below.

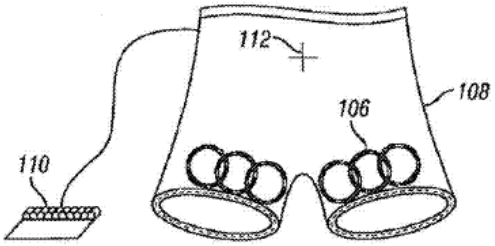

FIG. 9B

Figure 9B above illustrates shorts 108, which is "an abdominal garment" with coils 106 disposed therein. *Id.* ¶ 114. According to Burnett '870, when a coil wrap is "tailored into a garment," as in Figure 9B, it can be made from "a soft, body-compatible material, natural or synthetic, for example, cotton, wool, polyester, rayon, Gore-Tex, or other fibers or materials known to a person skilled in the art as non-irritating and preferably breathable." *Id.* ¶ 78.

As evidence that Burnett '870 teaches cooling the coils, Petitioner cites paragraphs 210, 215, and 235 of Burnett '870. Pet. 43. Petitioner does not identify, and we do not find, any teaching in the cited material suggesting that the coils in the embodiment of Figure 9B are cooled. Nor does Petitioner explain how the teachings of cooling in the cited paragraphs can be applied to the embodiment of Figure 9B. We review the disclosure of each of the three cited paragraphs of Burnett '870 in sequence.

Paragraph 210 of Burnett '870 discusses the embodiment depicted in Figure 35. Figure 35 is reproduced below.

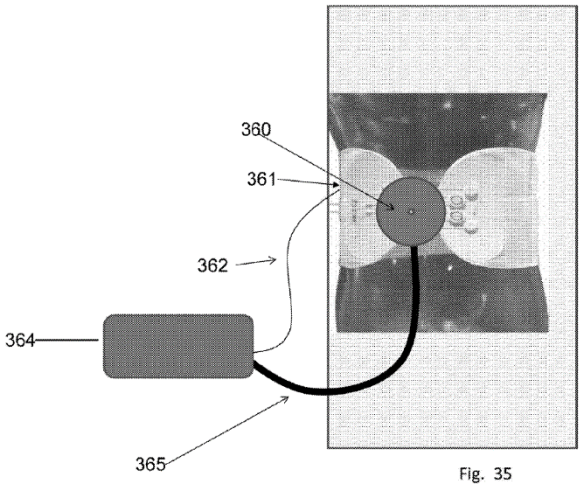

Fig. 35

Figure 35 shows "a variation of a back applicator **360** which may be positioned in proximity to or aligned along a spine." Ex. 1005 ¶ 210. "The applicator **360** may include several coils." *Id.* With respect to cooling, paragraph 210 states: "In one variation, a coil power line **365** for supplying power or current from the logic controller **364** to coils positioned in the applicator **360** may include fluid cooling, e.g., air or liquid cooling." *Id.* Neither Petitioner nor its expert persuasively explains how this teaching of using a coil power line to supply air or liquid cooling would apply when the coils to be cooled are wrapped in a garment ("shorts") rather than positioned in a casing. Pet. 43; Ex. 1002 ¶¶ 84–88, 260–269.

Figure 9B and its accompanying text do not show or describe a "coil power line" through which coolant could be delivered through the garment to the coils in the embodiment of Figure 9B. Nor does Petitioner explain how coolant would be delivered to the coils in shorts 108 of Figure 9B. Ex. 1005, Fig. 9B, ¶ 114. Even if connector 110 could be adapted for that

purpose (an argument Petitioner does not make), it is not clear how Petitioner contends the coolant would be distributed to coils that lack an applicator casing. The Petition simply cites paragraph 210 as supporting that it was known to cool coils, providing no explanation of how that knowledge would be implemented in the embodiment of Figure 9B. Pet. 43.

When a challenge is based on combining disclosures from multiple embodiments from a single reference, "there must be a motivation to make the combination and a reasonable expectation that such a combination would be successful, otherwise a skilled artisan would not arrive at the claimed combination." *In re Stepan Co.,* 868 F.3d 1342, 1346 n.1 (Fed. Cir. 2018). Given that Petitioner's obviousness assertions rely on combining the teachings from multiple embodiments, Petitioner was required to provide some explanation of how those teachings fit together to teach or suggest a method employing all of the steps recited in the claims. This, Petitioner has not done.

Absent persuasive evidence explaining how and why the embodiment of Figure 9B would be combined with the embodiment of Figure 35 with a reasonable expectation of success, it is not enough that Burnett '870 separately teaches an embodiment disclosing the claimed positioning of the applicator and an embodiment disclosing cooling an applicator.

Petitioner's citation of Burnett '870's paragraph 215 suffers from the same problem. Paragraph 215 discusses the embodiment depicted in Figure 39. Figure 39 is reproduced below.

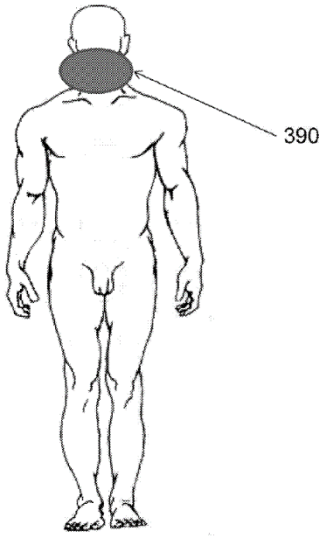

Figure 39 shows "a migraine applicator **390.**" Ex. 1005 ¶ 215. According to Burnett '870, "the applicator **390** may have cooling features . . . where cooling is provided by utilizing liquids or airflow, such as rapid airflow to cool the coils or applicator." *Id.* Again, Petitioner does not persuasively explain how this teaching would apply when the coils to be cooled are wrapped in a garment rather than positioned in an applicator.

Petitioner's citation of paragraph 235 of Burnett '870 is similarly not persuasive. It discusses placing a coolant in "direct contact with conductive surfaces of [a] coil" by drawing the coolant "through and/or in between the turns of the inductive coil." *Id.* ¶ 235. This teaching is consistent with the embodiments of Figure 35 and 39 (discussed above), in which the coils are encased in an applicator. On this record, however, it is not clear that this teaching is consistent with the embodiment of Figure 9B. Patent Owner argues that "a cooling system that works by direct contact" is incompatible

with "garment-wrapped coils." Prelim. Resp. 55. We are not prepared to make such a determination on this preliminary record. It, however, is Petitioner's burden to "show with particularity why the patent it challenges is unpatentable." *Harmonic*, 815 F.3d at 1363. On this record, Petitioner has not met that burden because it is not clear how Petitioner contends that coils wrapped in a garment, like shorts 108 in Figure 9B, would be placed in direct contact with a coolant, as discussed in paragraphs 235. Absent such an explanation, we will not speculate on whether and how known cooling systems could be applied in a garment-wrapped coil.

For the reasons given above, we determine Petitioner has not shown sufficiently that the combination of Burnett '870 and Magstim teaches oil-cooling the magnetic field generating coil, as limitation [16.a] requires. Thus, we conclude that Petitioner has not demonstrated a reasonable likelihood that it would prevail in showing that claims 16 would have been obvious over the combination of Burnett '870 and Magstim.

Each of claims 17–22 depends from claim 16. Petitioner's arguments and evidence for dependent claims 17–22 do not remedy the deficiencies discussed above with respect to claim 16. Accordingly, we conclude that Petitioner has not demonstrated a reasonable likelihood that it would prevail in showing that claims 17–22 would have been obvious over the combination of Burnett '870 and Magstim either.

D. Alleged Obviousness over Simon and Burnett '870

Petitioner asserts that claim claims 9–22 of the '634 patent would have been obvious over the combination of Simon and Burnett '870. Pet. 54–59. Based on this record, and for at least the following reasons, we

determine Petitioner has not established a reasonable likelihood that it would prevail in this assertion.

Petitioner reiterates that Claims 9–22 would have been obvious over Simon. *Id.* at 54. But, "[t]o the extent argued that a length-adjustable positioning member (e.g. [16.b]) and connecting tubes for fluid cooling (e.g., [18]) were not well-known or obvious to a POSITA, claims 16, 18 (and dependents) are rendered obvious by Simon in view of Burnett-'870."[9] *Id.* (citing Ex. 1002 ¶ 331). Patent Owner counters that an ordinarily skilled artisan would not have had a reason to combine the teachings of Simon and Burnett '870, nor a reasonable expectation of success when doing so. Prelim. Resp. 56. We find Patent Owner's argument more persuasive.

As explained above, because the magnetic field produced by Simon's device does not effectively penetrate the patient's tissue (Ex. 1004 ¶ 82), we determine Simon does not teach applying magnetic fields to a patient's body, which is required in independent claims 1 and 23. *See supra* Section II.B.2. In contrast, Burnett '870 teaches configuring the coils "to generate a magnetic field focused on a target nerve, muscle or other body tissues." Ex. 1005 ¶ 21.

Simon also describes the Burnett family of patent applications[10] as disclosing "an unconventional adjustable coil that neither passes high current

[9] It is unclear the significance of claim 18. In any event, in the heading for this ground, Petitioner challenges claims 9–22 as obvious over Simon and Burnett '870. *See* Pet. 54 (heading for Ground 3).
[10] Simon specifically refers to Patent Application Publication No. 2010/0222629 A1 (Ex. 2010).

through the coil nor uses a core to increase the stimulus." Ex. 1004 ¶¶ 166, 180. According to Simon,

> [Burnett] is therefore not designed to stimulate nerves or tissue as deeply or as powerfully as the device disclosed herein. Furthermore, as described above, the device disclosed herein is not intended to generate a magnetic field within bodily tissue, so use of the present invention would function differently than the one disclosed by BURNETT et al.

Id. ¶ 180.

Based on Simon's teaching "highlight[ing] the fundamental differences between the devices disclosed in Simon and Burnett," we agree with Patent Owner that an ordinarily skilled artisan "would not have looked to Burnett to modify Simon because their respective devices are different in structure and operation." *See* Prelim. Resp. 57–58. Thus, we determine that Petitioner has not demonstrated a reasonable likelihood that it would prevail in showing that the challenged claims would have been obvious over the combination of Simon and Burnett '870.

III. CONCLUSION

For the reasons explained above, we determine that Petitioner has not established a reasonable likelihood that it would prevail in showing that at least one of the challenged claims is unpatentable.[11]

[11] Patent Owner also argues that we should exercise our discretion under 35 U.S.C. §§ 314(a) and 325(d) to deny *inter partes* review. Prelim. Resp. 60–68. We do not address Patent Owner's contentions concerning discretionary denial because we deny the Petition for reasons explained above.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is denied, and we do not institute *inter partes* review of any claim of the '634 patent based on the grounds asserted in the Petition.

PETITIONER:

Scott McKeown
James L. David Jr.
Keyna Chow
ROPES & GRAY LLP
Scott.mckeown@ropesgray.com
James.I.davis@ropesgray.com
Keyna.chow@ropesgray.com

PATENT OWNER:

Richard D. Coller
Jon Wright
Richard Bemben
Lestin Kenton
Cristian Camarce
STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.
Rcoller-ptab@sternekessler.com
Jwright-ptab@sternekessler.com
Rbemben-ptab@sternekessler.com
Lkenton-ptab@sternekessler.com
Ccamarce-ptab@sternekessler.com