

**UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA
SOUTHERN DIVISION**

HYPER ICE, INC., a California
corporation,

Plaintiff,

v.

THERABODY, INC.,

Defendant.

Case No. 8:24-cv-02034-JWH-DFM

DEFENDANT THERABODY, INC.'S DISCLOSURE OF INVALIDITY CONTENTIONS

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I. Introduction

Defendant Therabody, Inc. (“Therabody” or “Defendant”) makes the following Patent Local Rule 3-3 Disclosure of Invalidity Contentions to Plaintiffs Hyper Ice, Inc. and Hyperice IP Subco, LLC (collectively “Hyperice” or “Plaintiff”) for Case No. 8:24-cv-02034-JWH-DFM.

Plaintiff has asserted U.S. Patent No. 12,036,174 (“the ’174 Patent”), and has informed Therabody that it intends to assert U.S. Patent No. 12,097,161 (“the ’161 Patent”) (collectively, “the Asserted Patents” or “the Patents-in-Suit”) against Defendant. First Amended Complaint (C.D. Cal. 8:24-cv-02034, Dkt. 12). In Plaintiff’s First Amended Disclosure of Asserted Claims and Infringement Contentions, served on February 27, 2025 (“Infringement Contentions”), Plaintiff purports to assert the following claims against Defendants:

- Claims 1-10, 12, 13, 15, 17, and 19 of the ’174 Patent
- Claims 1-10, and 14 of the ’161 Patent

Defendant’s Invalidity Contentions address only those claims addressed in Plaintiff’s Infringement Contentions. Defendant submits these Invalidity Contentions without waiving any argument about the sufficiency or substance of Plaintiff’s Infringement Contentions.

Based on its investigation to date, Defendant hereby: (a) identifies each item of prior art that anticipates each asserted claim or renders it obvious; (b) specifies whether each such item of prior art anticipates each asserted claim and/or renders it obvious and, if a combination of items of prior art makes a claim obvious, identify each such combination and the motivation to combine such items; (c) submits a chart identifying where specifically in each item of prior art each element of each asserted claim is found, including for each element that is governed by 35 U.S.C. § 112(f), the identity of the structure(s), act(s), or material(s) in each item of prior art that

performs the claimed function; and (d) identifies any grounds of invalidity of the asserted claims based on indefiniteness, lack of enablement, or lack of written description under 35 U.S.C. § 112(a).

On January 17, 2025, Defendants filed PGR2025-00026 (“the ’174 PGR Petition”) before the Patent Trial and Appeal Board at the U.S.P.T.O. challenging the validity of every asserted claim of the ’174 Patent. Defendants incorporate herein by reference the ’174 PGR Petition in its entirety.

In addition, pursuant to Patent Local Rule 3-4, and based on its investigation to date, Defendant has produced or is producing documents concurrently with these Invalidity Contentions.

II. Reservations

Defendant reserves the right to amend these Invalidity Contentions. The information and documents that Defendant produces are based on information available to date and are subject to further revision.

The information and documents that Defendant produces are based on Defendant’s present understanding of Plaintiff’s infringement theories as advanced by Plaintiff in its Infringement Contentions. If Plaintiff is permitted to amend its contentions, or provides additional information regarding its infringement theories, doing so may lead to further grounds for invalidity, and thus Defendant specifically reserves the right to amend or supplement its Invalidity Contentions.

Further, because discovery (including third party discovery) is at an early stage, Defendant reserves the right to amend or supplement these Invalidity Contentions. and Defendant reserves the right to supplement these contentions after becoming aware of additional

prior art or information. Defendant further reserves the right to introduce and use such supplemental materials at trial.

Defendant's claim charts in Exhibits A-B cite particular teachings and disclosures of the prior art as applied to limitations of the asserted claims. However, persons having ordinary skill in the art may view an item of prior art generally in the context of other publications, literature, products, and understanding. Accordingly, the cited portions are only exemplary, and Defendant reserves the right to rely on uncited portions of the prior art references and on other publications and expert testimony as aids in understanding and interpreting the cited portions, as providing context thereto, and as additional evidence that a claim limitation is known or disclosed. Defendant reserves the right to establish what was known to a person having ordinary skill in the art through other publications, products, and/or testimony. Defendant also reserves the right to rely on uncited portions of the prior art references, other publications, and testimony to establish that a person of skill in the art would have been motivated to combine certain of the cited references so as to render the claims obvious. Citations to figures are inclusive of all discussion of those figures.

Defendant further intends to rely on inventor admissions concerning the scope of the asserted claims or of the prior art relevant to the asserted claims found in, *inter alia*, the patent prosecution history and/or reexamination history for the Asserted Patents and related patents and/or patent applications; any deposition testimony of a named inventor of the Asserted Patents; and the papers filed and any evidence submitted by Plaintiff in conjunction with this litigation. Defendant reserves the right to contend that the asserted claims are invalid for failure to name the correct inventor(s), and/or to contend that Plaintiff lacks standing to bring this litigation with respect to such patents.

Furthermore, nothing stated herein shall be treated as an admission or suggestion that Defendant agrees with Plaintiff regarding the scope of any asserted claim or the claim constructions in its Infringement Contentions. To the extent that Defendant's Invalidity Contentions reflect claim constructions consistent with or suggested by Plaintiff's Infringement Contentions, no inference is intended nor should any be drawn that Defendant agrees with Plaintiff's claim constructions. By applying any of Plaintiff's apparent claim constructions and interpretations, Defendant does not concede in any way that those constructions and interpretations are correct, but rather asserts the fundamental principle that whatever infringes a claim if later in time anticipates if earlier in time. Defendant expressly reserves the right to propose alternative constructions to those that have been or may be advocated by Plaintiff.

Nor shall anything in these Invalidity Contentions be treated as an admission that Defendant's accused products meet any limitation of any asserted claim. Defendant denies that it infringes any claim of the Asserted Patents. To the extent that any prior art contains a claim element that is the same as or similar to an accused product, inclusion of that prior art in Defendant's Invalidity Contentions shall not be deemed a waiver by Defendant of any claim construction or non-infringement position. Defendant expressly reserves the right to contest any claim construction asserted by Plaintiff and expressly reserve all non-infringement arguments.

In its Infringement Contentions, Plaintiff contends that the asserted claims of the Asserted Patents are entitled to a priority date of October 23, 2017. Defendant reserves the right to challenge Plaintiff's alleged priority dates. Defendant further reserves the right to seek discovery regarding applicants' failure to comply with 35 U.S.C. § 112. In addition, Defendant relies on Plaintiff's alleged priority date in forming these Invalidity Contentions, and to the extent Plaintiff

later argues, or it is determined that, any different priority date applies, Defendant reserves the right to amend these contentions accordingly.

III. U.S. Patent No. 12,036,174 (“the ’174 Patent”)¹

A. Identification of Prior Art

In addition to the prior art cited on the face of the ’174 Patent and related patents, the admitted prior art in the specifications of the ’174 Patent and related patents, the prior art cited in any file histories of the ’174 Patent and related patents, the prior art cited in the ’174 PGR Petition, the prior art cited in any other reexaminations, *inter partes* review proceedings, reissue proceedings, or other examination or post-grant proceedings of the ’174 Patent and related patents, and the prior art cited in any invalidity contentions or expert reports submitted in any action or proceedings involving the ’174 Patent or related patents, Defendant identifies the following prior art that anticipates each asserted claim or renders it obvious.

1. Prior Art Patents

The following patents and patent publications are prior art to the asserted claims under at least 35 U.S.C. § 102 and/or 35 U.S.C. § 103. The identification of any patent or patent publication shall be deemed to include any counterpart patent or application filed, published, or issued anywhere in the world.

Patent or Publication Number	Country of Origin	Filing Date	Date of Issue or Publication
U.S. Patent No. 5,443,915	United States	December 6, 1999	September 3, 2002
U.S. Patent No. 7,384,405	United States	September 10, 2004	June 10, 2008
U.S. Patent No. 8,506,506	United States	December 30, 2009	August 13, 2013
U.S. Patent No. 8,906,009	United States	July 12, 2013	December 9, 2014
U.S. Patent No. 8,945,104	United States	August 22, 2008	February 3, 2015
U.S. Patent No. 9,050,133	United States	December 22, 2009	June 9, 2015

¹ Defendants further incorporate the ’174 PGR Petition and accompanying exhibits.

Patent or Publication Number	Country of Origin	Filing Date	Date of Issue or Publication
U.S. Patent No. 9,272,141	United States	June 28, 2012	March 1, 2016
U.S. Patent No. 9,452,287	United States	July 21, 2015	September 27, 2016
US2005/0209537	United States	March 19, 2004	September 22, 2005
US2006/0253051	United States	May 4, 2005	November 9, 2006
US2007/0282400	United States	June 2, 2006	December 6, 2007
US2010/0137752	United States	November 30, 2009	June 3, 2010
US2010/0204694	United States	February 6, 2009	August 12, 2010
US2011/0040235	United States	August 11, 2009	February 17, 2011
US2012/0316381	United States	June 13, 2012	December 13, 2012
US2013/0041296	United States	January 18, 2011	February 14, 2013
US2013/0046212	United States	August 22, 2012	February 21, 2013
US2013/0178764	United States	April 25, 2012	July 11, 2013
US2013/0184693	United States	December 13, 2012	July 18, 2013
US2014/0128780	United States	March 27, 2012	May 8, 2014
US2015/0119771	United States	October 27, 2014	April 30, 2015
US2015/0217142	United States	April 14, 2015	August 6, 2015
US2015/0305969	United States	October 17, 2013	October 29, 2015
US2016/0058156	United States	August 26, 2015	March 3, 2016
US2016/0310353	United States	December 23, 2014	October 27, 2016
US2016/0346162	United States	May 31, 2016	December 1, 2016
US2017/0036002	United States	July 7, 2016	February 9, 2017
US2017/0165486	United States	February 24, 2017	June 15, 2017
US2017/0209708	United States	March 28, 2017	July 27, 2017
WO2016/201366	United States	June 10, 2016	December 15, 2016
WO2004/023235	Korea	September 3, 2003	March 18, 2004
Korean Patent No. 20-0395260	Korea	June 30, 2005	September 7, 2005
Korean Patent No. 20-0412070	Korea	January 5, 2006	March 15, 2006
Korean Patent No. 10-0787874	Korea	August 24, 2006	December 27, 2007
Korean Patent No. 10-07938610	Korea	July 31, 2006	January 10, 2008
Korean Patent No. 10-	Korea	August 24, 2011	April 13, 2012

Patent or Publication Number	Country of Origin	Filing Date	Date of Issue or Publication
1123926			
Korean Patent No. 10-1367893	Korea	March 28, 2012,	February 27, 2014
KR1993-0001844	Korea	August 31, 1988	April 16, 1993
KR2001-0008111	Korea	November 8, 2000	February 5, 2001
KR2004-0042912	Korea	November 14, 2002	May 22, 2004
KR2011-0119468	Korea	April 27, 2010	November 2, 2011
KR2012-0128427	Korea	May 17, 2011	November 27, 2012
Japanese Patent No. 4,744,968	Japan	July 28, 2005	August 10, 2011
JPH059543U	Japan	July 24, 1991	February 9, 1993
JP2017035414	Japan	August 15, 2015	February 16, 2017
Chinese Patent No. 105726286	China	April 22, 2016	May 4, 2018

B. Primary References

Defendant contends that the primary prior art references identified below and described in the charts attached as Exhibits A-01 to A-13, by themselves, anticipate the asserted claims of the '174 Patent. To the extent that a primary reference is deemed not to anticipate a claim for failing to teach one or more limitations of that claim, Defendant contends that the claim would nonetheless have been obvious to a person of ordinary skill in the art at the time of the invention in view of the prior art reference itself, as described in the attached charts. Moreover, to the extent that a primary reference is deemed, by itself, not to anticipate or render obvious a claim for failing to teach one or more limitations, the claim would nonetheless have been obvious to a person of ordinary skill in the art at the time of the invention by the combination of the primary reference with one or more of the other primary references listed below.

Defendant's prior art charts (attached as Exhibits A-01 thru A-13) set forth the particular claims that are anticipated under 35 U.S.C. § 102 and/or rendered obvious under 35 U.S.C. § 103

by each item of prior art and identify where specifically in each item of prior art, each element of each asserted claim is found.

Exhibit	Primary References
A-01	U.S. Patent Application Publication No. 2016/0310353 (“Barasch”)
A-02	U.S. Patent Application Publication No. 2011/0040235 (“Castel”)
A-03	Korean Patent No. 10-1123926 (“Choi”)
A-04	U.S. Patent Application Publication No. 2015/0305969 (“Giraud”)
A-05	U.S. Patent Application Publication No. 2005/0209537 (“Gleason”)
A-06	Korean Patent No. 20-0395260 (“Kang”)
A-07	Korean Unexamined Application Publication No. 10-2001-0008111 (“Lee ’111”)
A-08	Korean Unexamined Application Publication No. 1993-0001844 (“Lee ’844”)
A-09	Korean Patent No. 10-0787874 (“Lee ’874”)
A-10	U.S. Patent No. 7,384,405 (“Rhoades”)
A-11	U.S. Patent Application Publication No. 2015/0119771 (“Roberts”)
A-12	U.S. Patent Application Publication No. 2017/0209708 (“Schwarz”)
A-13	Japanese Patent No. 4,744,968 (“Yamazaki”)

C. Obvious Combinations

To the extent that a primary reference is deemed, by itself, not to anticipate or render obvious a claim for failing to teach one or more limitations, the claim would nonetheless have been obvious to a person of ordinary skill in the art at the time of the invention by the combination of the primary reference with one or more other primary references and/or the knowledge of someone skilled in the art. For example, a person of ordinary skill in the art would have been

motivated to combine any reference in Exhibits A-01 to A-13 with any other reference(s) in Exhibit A-01 to A-13. Such combinations would be achieved, for example, by merely combining the disclosures described in the respective claim charts for each reference.

Defendant also contends that any of the primary references could be combined with any other primary reference (or combination of primary references) to render obvious the asserted claims. Such combinations would be achieved by merely combining the disclosures described in the respective claim charts for each reference.

The obviousness combinations are provided in the alternative to Defendant's anticipation contentions and are not to be construed to suggest that any reference included in the combinations is not itself anticipatory.

1. Exemplary Combinations

Below are examples of prior art references that would have been combined by one of ordinary skill in the art at the time of the alleged invention. These combinations are merely examples. The asserted claims of the '174 Patent are rendered obvious by:

- Lee'874 alone or in combination with one or more of Rhoades, Barasch, Giraud, Schwarz, Castel, Choi, Lee '111, Gleason, Kang, Lee '844, Roberts, and Yamazaki.
- Rhoades alone or in combination with one or more of Lee '874, Barasch, Giraud, Schwarz, Castel, Choi, Lee '111, Gleason, Kang, Lee '844, Roberts, and Yamazaki.
- Barasch alone or in combination with one or more of Rhoades, Lee '874, Giraud, Schwarz, Castel, Choi, Lee '111, Gleason, Kang, Lee '844, Roberts, and Yamazaki.

- Giraud alone or in combination with one or more of Rhoades, Barasch, Lee '874, Schwarz, Castel, Choi, Lee '111, Gleason, Kang, Lee '844, Roberts, and Yamazaki.
- Schwarz alone or in combination with one or more of Rhoades, Barasch, Giraud, Lee '874, Castel, Choi, Lee '111, Gleason, Kang, Lee '844, Roberts, and Yamazaki.
- Castel alone or in combination with one or more of Rhoades, Barasch, Giraud, Schwarz, Lee '874, Choi, Lee '111, Gleason, Kang, Lee '844, Roberts, and Yamazaki.
- Choi alone or in combination with one or more Rhoades, Barasch, Giraud, Schwarz, Castel, Lee '874, Lee '111, Gleason, Kang, Lee '844, Roberts, and Yamazaki.
- Lee '111 alone or in combination with one or more of Rhoades, Barasch, Giraud, Schwarz, Castel, Choi, Lee '874, Gleason, Kang, Lee '844, Roberts, and Yamazaki.
- Gleason alone or in combination with one or more Rhoades, Barasch, Giraud, Schwarz, Castel, Lee '874, Lee '111, Choi, Kang, Lee '844, Roberts, and Yamazaki.
- Kang alone or in combination with one or more Rhoades, Barasch, Giraud, Schwarz, Castel, Lee '874, Lee '111, Gleason, Choi, Lee '844, Roberts, and Yamazaki.

- Lee '844 alone or in combination with one or more Rhoades, Barasch, Giraud, Schwarz, Castel, Lee '874, Lee '111, Gleason, Kang, Choi, Roberts, and Yamazaki.
- Roberts alone or in combination with one or more Rhoades, Barasch, Giraud, Schwarz, Castel, Lee '874, Lee '111, Gleason, Kang, Lee '844, Choi, and Yamazaki.
- Yamazaki alone or in combination with one or more Rhoades, Barasch, Giraud, Schwarz, Castel, Lee '874, Lee '111, Gleason, Kang, Lee '844, Roberts, and Yamazaki.

2. Motivations to Combine

To the extent a finder of fact finds that a primary prior art reference does not disclose one or more limitations of an asserted claim, the asserted claim is nevertheless obvious because the alleged missing limitations contain nothing beyond ordinary improvements. In other words, the asserted claim combines known elements to achieve predictable results or chooses between clear alternatives known to those of skill in the art, particularly in view of the state of the art as reflected in the relevant prior art.

Moreover, as explained above, it would have been obvious to a person of skill in the art at the time of the alleged invention of the asserted claims to combine any primary reference with any combination of other primary references so as to practice the asserted claims. To the extent that Plaintiff argues that any concept claimed in the asserted claims is not disclosed in a primary reference, it would, at a minimum, have been obvious to adapt the primary reference to include the concept or combine it with other primary references that disclose the concept. Each concept

described and claimed in the Asserted Patents was known to those of skill in the art as available design choices for percussive massage devices.²

The Supreme Court has held that “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007). “When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one.” *Id.* at 417. As the Supreme Court made clear, “[f]or the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *Id.*

To determine whether there is an apparent reason to combine the known elements in the fashion claimed by the patent at issue, a court can “look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art.” *Id.* at 418. For example, obviousness can be demonstrated by showing “there existed at the time of invention a known problem for which there was an obvious solution encompassed by the patent’s claims.” *Id.* at 420. “[A]ny need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *Id.* Common sense also teaches that “familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.” *Id.*

² Each concept described and claimed in the ’174 Patent was known to those of skill in the art as available design choices for massage devices.

However, the Supreme Court in *KSR* held that a claimed invention can be obvious even if there is no explicit teaching, suggestion, or motivation for combining the prior art to produce that invention. In summary, *KSR* holds that patents that are based on new combinations of elements or components already known in a technical field may be found to be obvious. *See, generally, KSR*, 550 U.S. 398. Specifically, the Court in *KSR* rejected a rigid application of the “teaching, suggestion, or motivation [to combine]” test. *Id.* at 418. “In determining whether the subject matter of a patent claim is obvious, neither the particular motivation nor the avowed purpose of the patentee controls. What matters is the objective reach of the claim.” *Id.* at 419. “Under the correct analysis, any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *Id.* at 420. A key inquiry is whether the “improvement is more than the predictable use of prior art elements according to their established functions.” *Id.* at 417.

The rationale to combine or modify prior art references is significantly stronger when, as here, the references seek to solve the same problem, come from the same field, and correspond well to each other. *In re Inland Steel Co.*, 265 F.3d 1354, 1362 (Fed. Cir. 2001). The Federal Circuit has held that two references may be combined as invalidating art under similar circumstances, namely “[the prior art] focus[es] on the same problem that the ... patent addresses: enhancing the magnetic properties of ... steel. Moreover, both [prior art references] come from the same field Finally, the solutions to the identified problems found in the two references correspond well.” *Id.* at 1364 (concerning patents and prior art relating to improving the magnetic and electrical properties of steel).

In view of the Supreme Court’s *KSR* decision, the PTO issued a set of Examination Guidelines. Examination Guidelines for Determining Obviousness Under 35 U.S.C. §103 in

view of the Supreme Court Decision in *KSR International Co. v. Teleflex, Inc.*, 72 Fed. Reg. 57526 (October 10, 2007). Those Guidelines summarized the *KSR* decision and identified various rationales for finding a claim obvious, including those based on other precedents. Those rationales include:

(A) Combining prior art elements according to known methods to yield predictable results;

(B) Simple substitution of one known element for another to obtain predictable results;

(C) Use of known technique to improve similar devices (methods, or products) in the same way;

(D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;

(E) “Obvious to try” – choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;

(F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art;

(G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

Id. at 57529. The above rationales likewise apply in rendering obvious the asserted claims of the Asserted Patents.

The references disclosed herein, alone or in combination, contain an explicit and/or implicit teaching or motivation to combine them due to the following: (1) the knowledge generally available to a person of ordinary skill in the art; (2) the prior art references as understood by a person of ordinary skill in the art; (3) the nature of the problem to be solved; (4) the fact that each prior art reference addresses similar problems; and (5) the knowledge of those skilled in the art that the disclosed elements had been or could be used together.

As an example of those reasons and motivations to combine the references, the primary

references identified in Section III.B generally relate to massage devices, and in particular to massage devices capable of transmitting a variety of types of energy towards a user's skin. *See* Ex. A-01 to A-13. The references disclose similar components and techniques for applying percussive massage to a user. *Id.* The attached charts in Ex. A-01 to A-13 provide additional reasons and motivations to combine the charted references.

Additionally, the primary references listed above are analogous art. They are all directed to massage devices, and in particular to massage devices with the ability to transmit various types of energy toward the user's skin:

- Lee '111 at Abstract (“The present invention relates to an automatic percussion massager, which is easily portable, and adapted to provide a certain pressure impact to the human body to facilitate recovery from fatigue or breakdown of body fat comprising a motor (14) operated by an on/off switch (30) for selecting or deselecting a massage function; a rotating gear (18) which is exactly reversely rotated by a gearbox (16) which converts the rotational force of the motor (14) into a reverse direction; a linear gear (20) which meshes with the rotating gear (18) and reciprocates in a linear line along a guide (26); a massage rod (22) which is integrally formed with the rotating gear (18) and the linear gear (20) and reciprocates in and out of a case (40); and a cylindrical protective cover (50) comprising a protective cover (50) having a cylindrical shape with one side pressed against the case (40) and a contact member (52) in planar contact with the human body on the other side, the contact member (52) having a wrinkled member (56) in the middle for adjustable length, the contact member (52) having a heat wire (58) embedded therein whose temperature is regulated by a thermostatic

control switch (28), a body fat sensor (54) for measuring body fat, and a temperature sensor (60) for measuring the temperature of the heated area by the heat wire (58), wherein the case (40) is configured with a display (32) for temporally displaying the body fat value under the control of a control device (34) that processes the measurement signal of the body fat sensor (54).”);

- Barasch at Abstract (“Embodiments of the present invention provide a massager device, system, and method. A massager is configured to communicate (directly or indirectly) a user feedback message to a target in response to a determination that an event has occurred.”);
- Choi at Abstract (“The present invention relates to a muscle massage device that can deliver a mechanical vibration to the muscles to relax the muscles, and more particularly, to a muscle vibration massage device composed of a gun (GUN) type to be easy to use by hand.”);
- Rhoades at Abstract (“Disclosed is an apparatus including a handle capable of manipulation by a human hand, and one or more head portions to mate to various types of treatment attachments, which may be moved over an area of skin and/or body part by a motion generator moving the head portions, and/or by a user manipulating the handle. Various suitable attachments include applicator attachments having abrasive surfaces, oxygenating attachments having pores through which oxygen may travel, brush attachments for cleaning and polishing, thermal attachments for heating and cooling, and light radiating attachments. The motion generator may move the attachments by vibrating, spinning, oscillating, or propagating sonic waves through the head portions. Thus, attachments may be

attached and removed from the head portions to treating skin and/or body parts by abrasion, cleaning, polishing, lighting, or oxygenation.”);

- Giraud at Abstract (“Provided is a massaging appliance comprising: a body which has drive means, at least one type of massaging head which comprises at least two massaging elements, a transmission mechanism which allows the massaging elements to be activated under the action of the drive means, fitting means which are designed to fit at least one type of massaging head in a removable manner on the body, distinguishing means for distinguishing the type of massaging head fitted on the body and control means for controlling said massaging appliance which, depending on which type of massaging head is distinguished, are designed to act on the drive means as to control the movement of at least two elements of the massaging head.”);
- Schwarz at Abstract (“Devices and methods for tissue treatment produce a mechanical stimulation therapy and electromagnetic field therapy. The mechanical stimulation therapy provides stimulation of blood circulation and stimulates treated cells. The electromagnetic field enables thermal treatment of tissue. Combination of both therapies improves soft tissue treatment, mainly connective tissue in the skin area and fat reduction.”);
- Lee '874 at Abstract (“The present invention relates to a skin care device having a printed circuit board containing a built-in control unit, a housing equipped with a keypad and an indicator window; and a contact unit mounted on an upper front surface of the housing, wherein the device is configured to comprise: an insertion groove formed on a front border of the contact unit; at least one infrared LED

inserted into the insertion groove, electrically coupled to the control unit, and selectively emitting near-infrared, infrared, and far-infrared light; at least one ultraviolet LED inserted into the insertion groove at intervals spaced from the infrared LED, electrically coupled to the control unit, and selectively emitting ultraviolet light in a wavelength band of 200 to 400 nanometers; a vibrator mounted in the front center of the contact unit and imparting vibration upon skin contact; a second detection sensor mounted in the space between the infrared LED and the ultraviolet LED and connected to the control unit for switching the infrared LED, ultraviolet LED, and vibrator in a control sequence to drive the infrared LED, ultraviolet LED, and vibrator only upon skin contact; and a first detection sensor mounted in the space between the infrared LED and the ultraviolet LED and connected to the control unit for detecting the condition of the skin upon skin contact and transmitting the detection value to the control unit so that a skin care program suitable for the skin of the user is performed.”); and

- Castel at Abstract (“A device for the transdermal delivery of a therapeutic agent at a treatment site comprising a housing containing: a mechanical vibration element; a light source; a heating and/or cooling element; a power source for powering said mechanical vibrational element, light source, and heating element; and an electronic control module.”).
- Gleason at Abstract. (“The massage device has a housing, which includes a massage head integral with the housing. The massage head has a first massaging surface. A heating element, integral with the housing, is positioned sufficiently proximate to the first massaging surface to raise a temperature of the first

massaging surface above ambient temperature. The massage device also includes a massage head cover formed to engage the massage head, said massage head cover comprising a second massaging surface and a freezable material.”)

- Kang at p. 2. (“The present invention relates to a portable skin massager, and more specifically, to a portable skin massager that integrates cold, hot, ion, and vibration massage functions into a single small device, and continuously induces a predetermined range of cold and hot temperatures to expand and contract pores of the skin and maintain skin elasticity.”).
- Lee ’874 at ¶ 12. (“The present invention relates to a skin care device, and more particularly to a skin care device that combines a small LED-type infrared, ultraviolet light generating lamp and ultrasonic waves, and that can be used for various functions such as sterilization, treatment, heating, exfoliation, and cosmetic purposes through a single unit according to the user's choice, and that is easy to carry and use.”).
- Roberts at Abstract. (“A trigger point massage therapy device for well-controlled trigger point therapy, suitable for long-term use by a health practitioner with minimal risk of pain or injury, can include a main body with a handle, rubberized grips, a connection pin, that can connect to a pressure point base with a pressure point tip, whereon can further be installed additional pressure point tips in different sizes; a pressure sensor, a step-vibration component, an electro-motor; and additionally heating, ultra sound, electrical stimulation, infrared, and cold laser light components. The device can further include a control unit, which can be used for programming and controlling the functions of the device. Also

described is a method for trigger point massage therapy, including measuring a pressure, adjusting the pressure, holding the pressure, rotating/unwinding, vibrating, and increasing the pressure.”).

- Yamazaki at 2:23–24. (“The present invention relates to a treatment device for performing cosmetic treatments on the skin surfaces of the body, such as the face, hands, and legs.”).

One of skill in the art would also have been motivated to combine the different publications and patents that were authored by employees of a given company or assigned to the same assignee and/or related to the same subject matter. Additionally, one of skill in the art would have been motivated to combine different references that were authored, developed, or invented by the same individual(s) related to the same subject matter. The common inventor/author/architect of the references demonstrate that they relate to continued work in a common field of effort and continued related developments in that field. One of skill in the art would, therefore, combine the references related to each individual. Additionally, based on the teachings of the references and/or the knowledge of one of ordinary skill, one of skill in the art would have been motivated to combine different references from the same company. And, one of skill in the art would have been motivated to combine prior art systems or products with any related or applicable documentation or literature for that system, including for the reason that these materials are related.

In addition, below are additional motivations to combine prior art for particular claim limitations. The following discussion of specific claim limitations are merely examples and are not limiting.

For example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach limitations 1[a] (“a body provided with a processing unit and a power source”) and/or the portion of elements 8[a] (“a body provided with... a power source, and a processing unit...”) and 17[a] (“a body provided with a power source and a processing unit...”), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any of the prior art that discloses limitations 1[a], 8[a], and/or 17[a] in Exhibits A-01 to A-13. For example, several prior art references, including at least Schwarz, Choi, Giraud, Castel, and Rhoades disclose or teach these features. A person skilled in the art would have understood that a massage device having a body, processing unit, and power source was well understood, and would have been motivated to incorporate these features into massage devices. *See, e.g.*, Schwarz at [0054] (“The system may include a power supply 21 connected to an energy source... The microprocessor control unit 22 with user interface 23 provides communication between the electromagnetic field treatment unit 25 and mechanical stimulation treatment unit 27. User interface 23 allows setting up the treatment parameters and also may provide the operator various treatment information. User interface 23 may include display.”); Choi at [0043] (“The motor control means includes a power supply means, and a circuit means for controlling means for providing power provided by the power supply means to the motor 200 in response to switching of the gun switch 400 to drive the motor.”); Giraud at [0122] (“The electric motor (6) is operated by a control unit (10) powered by a battery pack (B) positioned inside the body (3)... The control unit (10) is also connected to a manual control interface (11) that is accessible from the exterior of the body (3). The manual control interface (11) may, for example, include a stop/start switch and/or a means of manually selecting the operating programs.”); Castel at [0011] (“In general, the device comprises a housing containing a

mechanical vibration element, a light source, a heating and/or cooling element, a power source for powering the mechanical vibration element, light source, and heating/cooling element. An electronic control module is used to control the mechanical vibration element, light source, and heating and/or cooling element.”); Rhoades at 6:60–7:3 (“In one example, the power source is two AA batteries that fit within interior chamber 251 of handle portion 130. A location of conductors 253 and 254 define an end of the interior chamber 251. Leads 256 and 258 are connected to conductors 253 and 254, respectively, and bring current to/from motor 260. Lead 256 is coupled to circuit board 270 that includes switch 275 to control the operation of motor 260. Switch 275 may be a two-position switch (ON/OFF) or a multiple position switch for operating motor 260 at multiple or veritable speeds.”); Barasch at [0040] (“The massager has a housing 102, which may be made of plastic, glass, composite material, or any other suitable material now known or hereafter developed. A power source 116 receives and/or supplies electricity to power the various other components, which may include communications interface 108, computer 109, and at least one usage parameter detector 104 (which may be biometric or any other suitable sensor/encoder/timer for sensing usage parameters), user interface 106, speaker 119, and microphone 115.”); Lee ’111 at [0012] (“The body 10 has a case 40 having a "T " shape, and a power supply unit 12 mounted on the lower part of the case 40 that converts the rated power into a suitable operating power, and the operating power supplied by the power supply unit 12 is transmitted to the motor 14 as the user operates the on/off switch 30 for selecting or deselecting the massage function.”); Lee ’874 at [0028] (“The invention further comprises a body in the shape of a pen embedded with a printed circuit board having a control unit; an ultraviolet lamp in the shape of an LED fixed at a leading end of the body, electrically connected to the control unit and radiating ultraviolet light in the wavelength band of 200 to 400 nanometers;

a proximity sensor installed on a unit of the outer rim of the leading edge of the body surrounding the ultraviolet lamp and electrically coupled to the control unit; and a skin care device embedded in a rear end of the body, enclosed by a cover, and comprising a battery for powering the printed circuit board, the ultraviolet lamp, and the proximity sensor.”); Gleason at [0021] (“The housing 12 can be constructed in many different ways. The first exemplary embodiment of the massage device 10, as shown in FIG. 3, uses a housing 12 that has a hollow, somewhat cylindrical shape. However, the housing 12 can be formed in any shape imaginable and, presently, a plethora of massage devices of varying shapes and sizes are known to those skilled in the art. The housing 12 is intended to at least partially house the electronics associated with the massage device 10 and, more specifically, the massage head 14 and heating element 18. If, as shown in the first exemplary embodiment, the massage device 10 is designed to be handheld, a handle 26 may be attached to the housing 12.”); Kang at 3 (“The purpose of this title is to provide a portable skin care device having a head cap having a plate for transmitting hot and cold temperatures to the skin at the tip of the main body, a handle for preventing slipping is provided on the side of the main body, and an ON/OFF switch, wherein a microprocessor for controlling the operation of the entire system by a program according to a control signal input by a user and controlling a fan motor and supply current depending on whether a set temperature is reached; a function selection switch means for selecting the hot and cold function and ON/OFF of the power; a skin condition detection means for detecting and determining the condition of the skin; a head cap having a plate that is installed with an ion coating layer in direct contact with a specific part of the skin and contacts the skin while emitting ions, and having a detachable screw part; a temperature detection unit for detecting the temperature of the device depending on the setting of the switch input unit; a driving motor unit for driving the fan depending on whether the rising temperature detected by

the temperature detection unit reaches the set temperature; The present invention is achieved by a portable massage device characterized in that it comprises: a heat source generating member for generating and transmitting cold and hot heat according to the above-mentioned power supply status; a heat electric means having a cooling plate and a heat sink attached thereto; a vibration means equipped to stimulate the skin; and a display means for informing the user of a signal detected by the skin detection means and a selection function of the switching means.”); Roberts at Abstract (“A trigger point massage therapy device for well-controlled trigger point therapy, suitable for long-term use by a health practitioner with minimal risk of pain or injury, can include a main body with a handle, rubberized grips, a connection pin, that can connect to a pressure point base with a pressure point tip, whereon can further be installed additional pressure point tips in different sizes; a pressure sensor, a step-vibration component, an electro-motor; and additionally heating, ultra sound, electrical stimulation, infrared, and cold laser light components. The device can further include a control unit, which can be used for programming and controlling the functions of the device. Also described is a method for trigger point massage therapy, including measuring a pressure, adjusting the pressure, holding the pressure, rotating/unwinding, vibrating, and increasing the pressure.”); Yamazaki at 4:35–38 (“Here, the control system of the treatment device 1 will be described mainly with reference to Fig. 7. That is, the treatment device 1 includes a tapping drive circuit 34, an iontophoresis circuit 33, a low-frequency supply circuit 32, and a controller 31 that controls each part in an integrated manner based on input operations from the user via the input operation unit 30.”). Thus, a person of ordinary skill in the art would have been motivated to modify any of the primary references to include this feature. For example, a person of ordinary skill in the art would have recognized that incorporating a power source and a processing unit in the body would be beneficial because the power source could

supply the device with energy to function and the processing unit could control the manner in which the device functions. A person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have understood that these references disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example to the extent that any primary reference is deemed not to anticipate a claim for failing to teach the portions of limitations 1[b] (“a plurality of energy generator elements being independently operable to convert electricity from the power source into a plurality of different energy types transmittable towards an area of skin of a user”) and/or the portion of elements 8[b] (“a first energy generator element and a second energy generator element coupled to the body, the first and second energy generator elements being independently operable to convert electricity from the power source into a first energy type and a second energy type, respectively, and direct the first and second energy types toward an area of skin,...”) and 17[b] (“a first energy generator element and a second energy generator element coupled to the body, the first and second energy generator elements being independently operable to convert electricity from the power source into a first energy type and a second energy type, respectively, and direct the first and second energy types toward an area of skin”), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any of the prior art that discloses limitations 1[b], 8[b], and/or 17[b] in Exhibits A-01 to A-13. For example, several prior art references, including at least Lee '111, Rhoades, Barasch, Choi, Giraud, Schwarz, and Castel disclose or teach these features. A person skilled in the art would have understood that a massage device having a multiple types of independently operable energy generators for transmitting types of energy towards the skin was well understood, and

would have been motivated to incorporate these features into massage devices. *See, e.g.*, Lee '111 at [0012], [0018] (“The body 10 has a case 40 having a "T " shape, and a power supply unit 12 mounted on the lower part of the case 40 that converts the rated power into a suitable operating power, and the operating power supplied by the power supply unit 12 is transmitted to the motor 14 as the user operates the on/off switch 30 for selecting or deselecting the massage function. The rapid rotational force of the motor 14, which operates as the operating power is supplied, is slowed down to a suitable speed by the gearbox 16 and transmitted to the rotating gear 18, and the rotational force of the rotating gear 18 is transmitted to the engaged linear gear 20 to cause the massage rod 22 formed integrally with the linear gear 20 to reciprocate in a linear line. The linear motion of the linear gear 20 is performed by the gearbox 16, which is adapted to instantaneously change the direction of rotation of the motor 14... The human body contact member (52) is configured to enhance the massage effect ... by applying a predetermined heat to the body part to be massaged by installing a heat wire (58) that emits a predetermined heat by a power supplied by the power supply part (12).”); Rhoades at 16:43–47, 17:39–42 (“[T]reatment may be provided by a light energy providing attachment, which may or may not be in motion from a motion generator, and may or may not be used to simultaneously perform another treatment... Also, it is possible to heat treat the skin or a body part with a thermal a energy providing attachment, which may or may not be in motion from a motion generator, and may or may not be used to simultaneously perform another treatment.”); Barasch at [0046] (“User interface 106 comprises a mechanism for massager 100 to receive input from a user (and in some embodiments, to present feedback to the user). In some embodiments, the input may be selection of power on/power off, selection of the vibration settings (e.g., high, medium, or low intensity, or a particular pattern, etc.), and/or selection of other settings such as, for example, a temperature

of a heating/cooling mechanism 107 within the massager 100, etc.”); Choi at [0051] (“The infrared LED lamp 500 is controlled by the motor control means in accordance with the switching operation of the gun switch 410. It can be configured as shown in the example, or a separate switch can be configured to be used as a separate operation from the vibration massage.”); Giraud at [0016] (“Indeed, in the massaging appliance described in the invention, the control means can be configured to act simultaneously upon the wave-emitting system and the driving means, so as to control the movement of at least two elements of the massaging head, and to do so depending on the type of massaging head distinguished, to create at least two different phases of skin treatment during the treatment.”); Schwarz at [0073] (“The arrangement of mechanical stimulation treatment unit 27 and electromagnetic wave treatment unit 25 may be in one or more separate applicators 24. Where one applicator is used, the applicator 24 may contain one treatment energy delivery element designed for transmission of mechanical stimulation and electromagnetic waves into the soft tissue. However, the mechanical stimulation treatment unit 27 and electromagnetic wave treatment unit 25 may be designed with separate energy delivery elements organized in concentric, axial symmetrical or non-symmetrical ways.”); Castel at [0017] (“[T]he method includes the steps of applying mechanical energy the treatment site...; applying light energy to the treatment site; and applying a composition comprising a therapeutically effective amount of the therapeutic agent. These steps may be preformed in separately, but are preferably performed simultaneously.”); Lee ’874 at [0045] (“[I]t could be in the form of near-infrared light for a period of time, followed by ultraviolet light for another period of time, followed by ultrasonic vibration.”); Kang at 2 (“The present invention relates to a portable skin massager, and more specifically, to a portable skin massager that integrates cold, hot, ion, and vibration massage functions into a single small device, and continuously induces a

predetermined range of cold and hot temperatures to expand and contract pores of the skin and maintain skin elasticity.”); Roberts at Abstract (“A trigger point massage therapy device for well-controlled trigger point therapy, suitable for long-term use by a health practitioner with minimal risk of pain or injury, can include a main body with a handle, rubberized grips, a connection pin, that can connect to a pressure point base with a pressure point tip, whereon can further be installed additional pressure point tips in different sizes; a pressure sensor, a step-vibration component, an electro-motor; and additionally heating, ultra sound, electrical stimulation, infrared, and cold laser light components. The device can further include a control unit, which can be used for programming and controlling the functions of the device. Also described is a method for trigger point massage therapy, including measuring a pressure, adjusting the pressure, holding the pressure, rotating/unwinding, vibrating, and increasing the pressure.”); Yamazaki at 8:1-12 (“The head unit 53 is provided on a casing 52. A tapping mechanism 58 is mounted on the head unit 53, and the tapping mechanism 58 is provided with a tapping electrode 57 that is provided at the tip of the head unit and is held so as to be movable forward and backward in the directions of the arrows A1-A2. The tip surface of the head unit 53 that is provided with the tapping electrode 57 is formed on the casing 52 in a position that bows to the base end side of the casing 52 (the handling unit 52a side described later). It is being carried out. The tapping mechanism 58 is provided with a solenoid 54 as a magnetic circuit that drives (moves back and forth) the tapping part 57 at a frequency of, for example, 200 Hz via the movable piece 54. Furthermore, the tapping electrode 57 also serves as a cosmetic treatment electrode for ion introduction that is to be brought into contact with the skin surface to be treated. A grip electrode 59 that pairs with the cosmetic treatment electrode for ion introduction (tapping part 57) is provided on the back of the handling part 52a of the casing 52.”). Thus, a person of ordinary skill in the art would have been motivated

to modify any of the primary references to include this feature. For example, a person of ordinary skill in the art would have recognized that a device having multiple, independently operable functions of, e.g., massaging, temperature treating, and/or light treating would appeal to device users seeking various forms of therapeutic treatment. A person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have understood that these references disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach the portion of limitation 1[b] (“the plurality of energy generator elements being arranged coaxially about an axis”) and/or claim 3 (“wherein the second energy generator element is substantially ring shaped and arranged coaxially about the first energy generator element”), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any of the prior art that discloses limitations 1[b] in Exhibits A-01 to A-13. For example, several prior art references, including at least Choi, Castel, Schwarz, Giraud, and Rhoades disclose or teach these features. A person skilled in the art would have understood that a massage device having a plurality of energy generators arranged coaxially around an axis or arranged coaxially around one another was a well-known design choice and would have been motivated to incorporate these features into massage devices. *See, e.g.*, Choi at [0048] (“The infrared lamp housing 600 is tubular in shape, comprising at least one or more infrared lamp fixing parts 610 spaced at regular intervals along a circular outer periphery to which the infrared LED lamp 500 is fitted and coupled, and a shaft pass-through hole 620 in the center for passing the slide shaft 321.”); Castel at [0016] (“In still

another aspect, the heating and/or cooling element comprises a Peltier element, resistor, or combinations thereof. The Peltier element is preferably positioned annularly around mechanical vibration element, such as the ultrasonic transducer.”); Schwarz at [0073] (“The arrangement of mechanical stimulation treatment unit 27 and electromagnetic wave treatment unit 25 may be in one or more separate applicators 24. Where one applicator is used, the applicator 24 may contain one treatment energy delivery element designed for transmission of mechanical stimulation and electromagnetic waves into the soft tissue. However, the mechanical stimulation treatment unit 27 and electromagnetic wave treatment unit 25 may be designed with separate energy delivery elements organized in concentric, axial symmetrical or non-symmetrical ways.”); Giraud at [0108] (“In one variant ... the massaging appliance (1) has, on the application surface (104) on the massaging head (105), light diodes (106) that ... will be positioned, for example, on the outer edge (107) of the application surface (104), or even distributed over said application surface (104) outside the trajectories of the massaging elements... A light transmission system (108) is positioned between the massaging head (4, 5, 6, 7, 8, ta, bi, ja) and the body (2). This light transmission system includes a fiber optic connection (109, 110) that directs the light emitted toward the application surface (104) or on the massaging elements, such as massaging tips.”); Rhoades at 5:26–29, 11:6–25 (“[A]pparatus 100 includes device or tool 110 having handle portion 130, head portion 120 and head portion 140. Head portions 120 and 140 are opposite each other in embodiments... It is contemplated that treatment attachments ... may be removably or permanently attached to head portion 120 and head portion 140. For example, such [] treatment attachments include ... a heating unit attachment; a cooling unit attachment; [and] a light source attachment.”); Lee ’111 at Abstract (“The present invention relates to an automatic percussion massager ... comprising ... a massage rod (22) which is integrally formed with the

rotating gear (18) and the linear gear (20) and reciprocates in and out of a case (40); and a cylindrical protective cover (50) comprising a protective cover (50) having a cylindrical shape with one side pressed against the case (40) and a contact member (52) in planar contact with the human body on the other side ..., the contact member (52) having a heat wire (58) embedded therein.”); Lee ’874 at [0036]–[0038] (“[A] circularly shaped fixing groove 150 is formed in the center of the top front unit of the housing 100, and an insertion groove 140 is formed along the border thereof. On the other hand, the contact unit 200 comprises an LED 210 for infrared light, an LED 212 for ultraviolet light, a cover 220, and a head 232 connected to a vibrator 230. In this case, the LEDs 210 for infrared light 212 for ultraviolet light are fixed in the insertion grooves 140, which may be arranged in pairs or in plurality of pairs diametrically symmetrically with respect to the center of gravity of the contact unit 200.”); Roberts at Figure 4; Lee ’844 at Figure 5. Thus, a person of ordinary skill in the art would have been motivated to modify any of the primary references to include this feature. For example, a person of ordinary skill in the art would have recognized that a device having multiple coaxially arranged treatment elements would be beneficial because such an arrangement allows the device to have a single orientation for various treatment functions, which is convenient for users. A person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have understood that these references disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach limitations 1[c] (“wherein the body includes a grip arranged to be grasped by a hand of the user applying a gripping force to maintain the plurality of energy

generator elements on or adjacent the area of skin,”) and/or the portion of elements 8[a] (“...the body further including a skin contacting surface maintainable against skin of a user by a force applied by a hand of the user when gripping the body”) and 17[a] (“...the body including a skin contacting surface maintainable against skin of a user by a force applied by a hand of the user when gripping the body”), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any of the prior art that discloses limitations 1[c], 8[a], and/or 17[a] in Exhibits A-01 to A-13. For example, several prior art references, including at least Rhoades, Barasch, Schwarz, Lee ’111, Choi, Lee ’874, and Castel disclose or teach these features. A person skilled in the art would have understood that a massage device having a body including a grip for maintaining the energy generators against the skin of the user was well understood, and would have been motivated to incorporate these features into massage devices. *See, e.g.*, Rhoades at Abstract (“Disclosed is an apparatus including a handle capable of manipulation by a human hand, and one or more head portions to mate to various types of treatment attachments, which may be moved over an area of skin and/or body part by a motion generator moving the head portions, and/or by a user manipulating the handle.”); Barasch at [0040] (“In some embodiments, shaft 118 of massager 100, or the massager 100 itself, is configured for applying pressure to one or more human body parts... In some embodiments, the housing is shaped ergonomically to fit a gripping hand.”); Schwarz at [0078] (“FIG. 6 shows a device including an assisting movement element 60 which may increase and/or decrease the pressure applied on the tissue by the applicator 24 and/or device. Assisting movement element 60 may be used with manual movement of the applicator 24 to provide comfortable operation. Assisting movement element 60 may include one or more flexible link 61, sheaves 62 and/or movement elements 64 providing easier control to the applicator 24.”); Lee ’111 at [0021]

(“According to the foregoing invention, there is provided an automatic percussion massager that can be carried by a user and held in the hand for easy massage or acupuncture of any part of the body.”); Choi at [0001] (“The present invention relates to a muscle massage device that transmits mechanical vibrations to muscles to relax them, and more particularly to a muscle vibration massage device that is configured as a gun type for convenient use by holding it in the hand.”); Lee ’874 at [0031] (“As shown in FIG. 1, the inventive skin care device comprises a housing 100 having a roughly dumbbell shape that is easy to grip, and a contact (200) provided on top of the housing 100 and containing an infrared or ultraviolet light lamp that is in direct contact with the skin or that irradiates the skin with a certain band of wavelengths.”); Castel at [0041] (“The transdermal drug delivery device is typically no larger than a standard tube of lipstick or a cigar tube... The device can be gripped and firmly controlled in a self-care procedure within a user's hand.”); Giraud at [0120] (“[T]he drive unit (2) consists of an elongated body (3) in a generally cylindrical shape that has, at one of its ends (4), a removable means of adaptation (5) of the massaging head (1).”); Lee ’844 at 2 (“Accordingly, the present invention forms a facial massager in an "L" shape like an electric shaver, but miniaturizes it, and installs a surface infrared heater and a vibrator inside the facial massager, respectively, so that when sweat is discharged by far-infrared rays, waste materials, heavy metals, freckles, etc. are removed, thereby enhancing the beauty effect, and the user can enjoy a massage effect through soft vibrations, and by locally irradiating far-infrared rays to necessary areas, blood circulation can be improved through sweat secretion, so that the practicality is very high.”); Kang at 2 (“The purpose of this title is to provide a portable skin care device having a head cap having a plate for transmitting hot and cold temperatures to the skin at the tip of the main body, a handle for preventing slipping is provided on the side of the main body...”); Roberts at [0025] (“In an aspect, a trigger point massage

therapy device can include a main body with a soft palm pressure pad, a pressure point tip for application of pressure to a patient, and a handle with rubberized grip points, whereby a therapist can apply well-controlled pressure with one or two-handed operation.”); Yamazaki at 4:21–32 (“The head portion 3 is provided with cosmetic treatment electrodes 7, 8 that serve as electrodes for ion introduction and electrodes for electrical stimulation, and a tapping mechanism 15 that taps the skin surface that is in contact with the tip surface of the head portion 3 through tapping portions 5a, 5b, 5c. As shown in Fig. 3, a grip electrode 9 that comes into contact with the palm of the user's hand is provided on the rear portion of the handling portion 2a of the casing 2. As shown in Figs. 3 and 7, the rear portion of the casing 2 is provided with an input operation unit 30 for turning on/off the main power supply and for various settings, and an indicator lamp 10 for indicating the operation mode of the treatment device 1 set by the input operation unit 30. In this embodiment, the indicator lamp 10 is turned on when the tapping mechanism 15 is in operation and turned off when it is not in operation. The input operation unit 30 includes a power/mode selection button 14 for turning the main power supply ON/OFF and the tapping function ON/OFF, and for selectively switching between the iontophoresis function and the electrical stimulation (low-frequency stimulation) function, and adjustment buttons 11, 12 for varying the supply current in the selected operating mode and the level of the tapping force (hitting force).”). Thus, a person of ordinary skill in the art would have been motivated to modify any of the primary references to include this feature. For example, a person of ordinary skill in the art would have recognized that a handheld treatment device would allow for the device to be portable and used in a wide variety of situations. Such a grip would also provide good ergonomics for utilizing a massager and allow a user or a third party to position the massager in positions where it would otherwise be difficult to apply sufficient force to the massager without

such a grip. A person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have understood that these references disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach limitations 1[d] (“wherein the plurality of energy generator elements includes a first energy generator element and a second energy generator element, and wherein the first energy generator element is an impact generator element having a tissue contact surface that is linearly actuatable along the axis to contact and cause corresponding physical movement of the area of skin.”) and/or the portion of elements 8[b] (“...the first energy generator element including an impact generator element having a tissue contact surface that is linearly actuatable along an axis to contact and cause corresponding physical movement of the area of skin”), 17[b] (“...the first energy generator element including an impact generator element having a tissue contact surface that is linearly actuatable along an axis to contact and cause corresponding physical movement of the area of skin”), claim 2 (“wherein the impact generator element further includes a drive mechanism and a piston, wherein the drive mechanism is operably coupled to a controller that directs electricity to the drive mechanism to move the piston and the tissue contact surface along the axis”), claim 6 (“wherein a first one of the plurality of different energy types is an impact force applied against a surface of the area of skin”), and claim 12 (“wherein the impact generator element further includes a drive mechanism and a piston, wherein the drive mechanism is operably coupled to a controller to direct electricity to the drive mechanism and move the piston and the tissue contacting surface along the axis”), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any

of the prior art that discloses limitations 1[d], 8[b], 17[b], claim 2, claim 6, and/or claim 12 in Exhibits A-01 to A-13. For example, several prior art references, including at least Lee '111, Choi, Giraud, and Barasch disclose or teach these features. A person skilled in the art would have understood that a massage device having an impact generator element was well understood, and would have been motivated to incorporate these features into massage devices. *See, e.g.*, Lee '111 at [0008] (“The automatic percussion massager of the present invention ... comprises ... a linear gear which meshes with the rotor and reciprocates in a linear line along a guide; a massaging rod integrally formed with the rotor and linear gear to reciprocate in and out of the case; ... and a heat wire having a temperature adjustable by a temperature control switch, ... wherein a temperature sensor for measuring the temperature of the area heated by the heat wire is installed.”); Choi at [0023] (“The vibration generating means comprises a vibration rotation part 310 coupled to the front end of the motor 200 for providing rotational force, a vibration slide part 320 for generating vibration by sliding back and forth by the vibration rotation part 310, a vibration stimulation part 330 for transmitting the vibration stimulation generated by the vibration slide part 320 to the user, and a anti-dislodgement part 340 for preventing the vibration slide part 320 from dislodging to the left or right.”); Giraud at [0139] (“[E]ach massaging finger (21) is constructed in the shape of a sort of rectilinear piston... Each finger is then guided laterally by a bore (51) placed in the hollow body (50). The end of each massaging finger (21) located inside the hollow body (50) cooperates with an off-center pin (52) carried on a maneuvering disc (53) belonging to the maneuvering means (25). The off-center pin (52) is positioned in a chamber (54) that is connected rigidly to the corresponding massaging finger, and in which the off-center pin (52) can move laterally, such that its rotation with the maneuvering disc (53) is transformed into a lateral movement of the corresponding massaging finger (21).”);

Barasch at [0044] (“The vibration unit 112 is any suitable apparatus for producing oscillation of massager 100. A vibration unit 112 may be a geared motor mechanism, which may have, e.g., an asymmetrical load affixed to a rotating shaft, a linear resonant actuator, or a pancake vibration motor, etc.”); Schwarz at [0074] (“Applicator 24 includes surface contacting the tissue including one or more energy delivery elements transmitting electromagnetic waves and one or more energy delivery element designed to transmit mechanical stimulation. The surface of a first energy delivery element is designed to transmit electromagnetic waves and a surface of a second energy delivery element is designed to transmit mechanical stimulation... The surface of second energy delivery element designed to transmit mechanical stimulation may be described as percussion guide.”); Rhoades at 7:38–53 (“It is also contemplated that device or tool 110 may include a motion generator to spin head portion 120 and/or head portion 140. Similarly, the motion generator may spin one or both of the head portions back and forth, such as by spinning the head portion a partial, full, or multiple rotations in one direction, and then by spinning the head portion back by a partial, full, or multiple rotations in the opposite direction. The rotation in the first direction can be more, less or equal to the amount of rotation back in the opposite direction. Such a spinning motion generator may include motor 260 and may include switch 285 to select movement of head portion 120, head portion 140, or both. It is also contemplated that the motor may generate oscillating motion such as when the poling of the alternating current applied to the motor change rapidly. Such motion is generally deemed to fall within the broad category of vibratory motion.”); Lee ’874 at [0063]–[0064] (“The vibrator 230 may be an ultrasonic vibrator that emits ultrasonic waves, or more preferably piezoelectric ceramic. An ultrasonic vibrator is a type of vibrating element that produces ultrasonic vibrations when an electrical pulse is resonated, and the appropriate frequency for skin care can range from 20Khz

to 10Mhz.”); Castel at [0013] (“In one aspect, the mechanical vibration element comprises one or more of an ultrasonic transducer, motor having an offset cam, buzzer, voice coil, or magnetic transducer, or combinations thereof.”); Roberts at [0027] (“In a related aspect, the device can apply rotation, vibration and forward/backward tip movement, which can increase or decrease applied pressure in increments of a predetermined duration, specified in milliseconds”); Yamazaki at 2:49–3:8 (“In order to achieve the above object, the treatment device according to the present invention includes a head portion that is brought into contact with a skin surface, an electrode for ion introduction provided in the head portion, and a device for applying ion to the head portion. and a tapping mechanism for tapping the skin surface that has been touched by the touching device, the tapping mechanism having a tapping section held at the tip of the head section so as to be movable forward and backward, a magnetic circuit for driving the tapping section, and a tapping drive circuit for outputting a drive signal for driving the tapping section to the magnetic circuit, the tapping mechanism further comprising a controller for controlling the tapping drive circuit to execute an iontophoresis mode by applying a negative voltage to the iontophoresis electrode, alternately outputting a positive drive signal whose output fluctuates within a positive voltage range and a negative drive signal whose output fluctuates within a negative voltage range, periodically interposing an output stop period, and varying the frequency of output fluctuation in each of the positive and negative drive signals.”). Thus, a person of ordinary skill in the art would have been motivated to modify any of the primary references to include this feature. For example, a person of ordinary skill in the art would have recognized that having an impact generator element in a treatment device with a linearly reciprocating tissue contact surface would allow the device to deliver percussive massage treatment in order to provide effective treatment such as massage, pain relieve, and other forms of treatment. A person

of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have understood that these references disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach claim 4 (“wherein the second energy generator element includes a reflecting groove circumferentially arranged about the axis, the reflecting groove defining a concave shape arranged to reflect energy generated from the second energy generator element towards the area of skin”), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any of the prior art that discloses claim 4 in Exhibits A-01 to A-13. For example, several prior art references, including at least Choi, Castel, and Lee ’111 disclose or teach these features. A person skilled in the art would have understood that utilizing reflecting grooves or other reflecting surfaces to redirect energy to its intended location was well understood, and would have been motivated to incorporate these features into massage devices. *See, e.g.*, Choi at [0020], [0046], [0048] (“And further includes an infrared LED lamp 500 for providing an infrared heating function, and an infrared lamp housing 600, which is configured in a circular shape corresponding to the inner surface shape of the main body 100, and is coupled from within the opening of the main body 100 so that the front end is inserted into the opening and exposed to the outside, to fix the infrared LED lamp 500, and to guide the infrared light generated by the infrared LED lamp 500 to irradiate the skin of the user... The infrared lamp housing 600 holds the infrared LED lamp 500 and is a means for directing infrared light generated by the infrared LED lamp 500 to irradiate the skin of a user... The infrared lamp housing 600 is tubular in shape, comprising at least one or more infrared lamp

fixing parts 610 spaced at regular intervals along a circular outer periphery to which the infrared LED lamp 500 is fitted and coupled.”); Castel at [0060]–[0061] (“In one exemplary embodiment, a plurality of LEDs are positioned in an annular pattern at the periphery at one end of the device. For devices using an ultrasonic transducer, the plurality of LEDs are preferably positioned around the ultrasonic transducer. Pre-determined etched patterns on a light-conductive cap plate assembly may be included in order to help direct the light in the appropriate plane and location at the treatment site. The pattern, for example, may be circular, oval or grid pattern, or any other pattern designed to provide an even dispersion of the light to the treatment site.”); Lee ’111 at Claim 1 (“A automatic percussion massager configured with... a contact portion (52) in planar contact with the body at the other side, a cylindrical protective cover (50) having a length-adjustable corrugated portion (56) in the middle portion, the contact portion (52) having a heat wire (58).”); Lee ’844 at 2 (“Symbol 17 is a far-infrared surface heating element, which is composed of a lead wire (18), a conductor wire (19), and a heating net (20). In addition, a heater catch (21) is formed by laminating heat-resistant vinyl on a carbon net on the outer periphery of the heating net (20) so that the far-infrared ray surface heating element (17) is kept stiff. The above-mentioned far-infrared surface heating element (17) is formed with a thickness of about 1.5 mm, the conductor (19) is a metal wire made of a mixture of silver and aluminum, and the heating net (20) is made by coating carbon particles on special fibers, so that the heat generated by the surrounding conductor (19) is transferred to the heating net (20) to emit far-infrared rays. The heating temperature of the above-mentioned far-infrared surface heating element (17) is maintained at 50°C or lower. Accordingly, a circular conductor (19) and a lead wire (18) are fixedly installed on the surface of the heating net (20), and a heater catch (21) is formed on the outer periphery to form a far-infrared surface heating element (17). In addition, an alumina

coating is applied to the back of the far-infrared surface heating element (17) to reflect heat. Symbol 22 is a heating element holder fixedly installed on the inner surface of the face portion (15) to catch the far-infrared ray emission (17). Symbol 23 is a face contact part, and a number of opening holes (24) are perforated on an arc surface, and a screw part is formed on the outer surface to be screw-connected to the face part (15) and formed into one piece. The above-mentioned heat hole (24) is formed to supply heat emitted from the far-infrared surface heating element (17) to the skin.”). Thus, a person of ordinary skill in the art would have been motivated to modify any of the primary references to include this feature. For example, a person of ordinary skill in the art would have recognized that this feature is beneficial because a conclave reflecting groove helps to redirect or concentrate energy to the desired location, resulting in more efficient and effective energy transfer. A person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have understood that these references disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach claim 5 (“wherein the second energy generator element includes a heat generator element.”) and/or the portion of claim 13 (“wherein the second energy generator element is a heat generator element”), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any of the prior art that discloses claims 5 and/or 13 in Exhibits A-01 to A-13. For example, several prior art references, including at least Choi, Schwarz, Rhoades, Castel, Lee ’874, Lee ’111, Giraud, and Barasch disclose or teach these features. A person skilled in the art would have understood that a massage device having a heat generator element as well understood, and would have been

motivated to incorporate these features into massage devices. *See, e.g.*, Choi at [0049] (“The infrared LED lamp 500 is a means for generating infrared light to provide an infrared heating function.”); Schwarz at [0043] (“Electromagnetic field used for heating the soft tissue may be radiofrequency field or microwave field... All the above mentioned waves may cause movement of charged particles e.g. ions, rotation of dipolar molecules or polarization of normally non polar particles and therefore increase the tissue temperature.”); Rhoades at 17:54–18:3 (“In embodiments, a heating unit may also be disposed either within a treatment attachment, adjacent thereto, or both... The heating unit may be, for example, an infrared light, an ultraviolet light, and/or a resistive heating element connected to the power source. For example, an electrical power source, connected to insulated wires, which are in turn connected to thermally conductive coils to produce resistive heat, may be sized to fit within interior portion 281 of device or tool 110. Thus, the power source may provide sufficient current, and the thermally conductive coils may draw sufficient current, to cause the thermally conductive coils to heat up head portion 120 and/or head portion 140 and heat a treatment attachment attached thereto. The heat from the heating unit advantageously soothes the skin or a body part during treatment.”); Castel at [0080] (“To provide additional heating or cooling, the device may be optionally equipped with a temperature control element. In one aspect, the temperature control element is a thermoelectric element, such as a Peltier unit. A Peltier unit is a two-terminal bidirectional device capable of heating or cooling by reversing the direction of current flow through the Peltier element.”); Lee ’874 at [0068] (“[A] light bulb 240 may be provided inside the housing 100 at a distance from the vibrator 230, the light bulb 240 being intended to increase the heating effect on the head 232, thereby maximizing the function of the infrared lamp and doubling the skin soothing effect.”); Lee ’111 at [0018] (“The human body contact member (52) is configured to... perform a

compress by applying a predetermined heat to the body part to be massaged by installing a heat wire (58) that emits a predetermined heat by a power supplied by the power supply part (12), A temperature sensor (60) capable of measuring the temperature of the body part being heated by the heat wire (58) and a temperature control switch (28) capable of adjusting the temperature of the heat wire (58).”); Giraud at [0015] (“The appliance may contain infrared diodes that can produce heat to achieve an “instant radiance” effect.”); Barasch at [0046] (“The heating/cooling mechanism 107 may be configured and disposed to provide heat and/or cooling to the external shaft 118. In embodiments, the heating may be achieved through a resistive heat process. In other embodiments, heating or cooling may be accomplished using a thermoelectric component.”); Lee ’844 at 2 (“The present invention relates to a far-infrared facial machine, and more particularly, to an electric far-infrared facial machine that is suitable for effectively managing skin beauty by simultaneously providing the effect of far-infrared rays to remove waste products from the skin and provide a massage effect by means of the effect of far-infrared rays by equipping a surface infrared heater and a vibrator.”); Gleason at Abstract (“The massage device has a housing, which includes a massage head integral with the housing. The massage head has a first massaging surface. A heating element, integral with the housing, is positioned sufficiently proximate to the first massaging surface to raise a temperature of the first massaging surface above ambient temperature. The massage device also includes a massage head cover formed to engage the massage head, said massage head cover comprising a second massaging surface and a freezable material.”); Kang at 2 (“The present invention relates to a portable skin massager, and more specifically, to a portable skin massager that integrates cold, hot, ion, and vibration massage functions into a single small device, and continuously induces a predetermined range of cold and hot temperatures to expand and contract pores of the skin and maintain skin

elasticity.”); Roberts at [0028] (“In further related aspects, the device can also provide heating, cold laser light, infrared, ultrasound, electrical stimulation, and other common therapeutic methods and functions.”); Yamazaki at 10:17-27 (“Furthermore, when the cleansing button 81 is pressed with the main power source turned on to execute the cleansing mode, the controller 93 of the treatment device 71 performs the following control.

That is, the controller 93 controls the iontophoresis circuit 92, which applies a voltage so that the cosmetic treatment electrodes 77, 78, 88 become positive poles (positive poles) and the grip electrode 79 becomes negative poles (negative poles), thereby executing the plus mode exemplified in the first embodiment. When this plus mode is executed, for example, dirt substances (such as sebum clogged in pores) can be removed from the skin surface that is in contact with the cosmetic treatment electrodes 77, 78, 88. Here, an LED capable of irradiating infrared rays may be provided in advance on the head portion 73 of the treatment device 71. In this case, the skin surface can be heated by irradiating infrared rays to the skin surface during the cleansing mode, which opens the pores and enhances the cleaning effect of the skin surface during the cleansing mode.”). Thus, a person of ordinary skill in the art would have been motivated to modify any of the primary references to include this feature. For example, a person of ordinary skill in the art would have recognized that this feature is beneficial because including a heat generator element in a massage device would be appealing to consumers, as heat treatment can soothe the body, relax muscles, and deliver other types of therapeutic relief. A person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have understood that these references disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach the portion of claim 6 (“a second one of the plurality of different energy types is a heat flux directed toward the area of skin.”) and/or the portion of claims 13 (“wherein the second energy generator element is a heat generator element configured to output the second energy type including a heat flux toward the area of skin”), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any of the prior art that discloses claims 6 and/or 13 in Exhibits A-01 to A-13. For example, several prior art references, including at least Choi, Schwarz, Rhoades, Castel, Lee '874, Lee '111, Giraud, and Barasch disclose or teach these features. A person skilled in the art would have understood that a massage device having a heat source that operated by providing a heat flux toward the skin was well understood, and would have been motivated to incorporate these features into massage devices. *See, e.g.*, Choi at [0060] (“[T]he infrared light generated by the infrared LED lamp 500 is emitted along the front of the infrared lamp housing 600 and irradiated onto the skin of the user to provide infrared heat.”); Schwarz at [0043] (“Electromagnetic field used for heating the soft tissue may be radiofrequency field or microwave field... All the above mentioned waves may cause movement of charged particles e.g. ions, rotation of dipolar molecules or polarization of normally non polar particles and therefore increase the tissue temperature.”); Rhoades at 17:42–50 (“In an embodiment, the thermal energy providing attachment radiates heat onto the skin and/or body part. For instance the heat may be... piped through the attachment. Thus the heat may enter the attachment from at least one opening in the head portion and exit the attachment from at least one opening in a surface opposite the head portion.”); Castel at [0059] (“The device of the present invention also comprises a single or multiple near infrared light sources. The light source is preferably a set of LEDs or lasers for

delivering near-infrared light... It is anticipated that the light energy provides synchronized shock waves and/or heat to the tissue surface.”); Lee ’874 at [0041] (“[T]he infrared radiation emitted by the infrared LED 210 is, as is well known, an electromagnetic wave having a wavelength in the range of 0.75 mm to 1 mm as a heat ray.”); Lee ’111 at [0007] (“The present invention has a further object in providing an automatic percussion massager that allows the massaged area to be steamed to a predetermined temperature to further enhance the effectiveness of the massage.”); Giraud at [0015] (“The appliance may contain infrared diodes that can produce heat to achieve an “instant radiance” effect.”); Barasch at [0046] (“The heating/cooling mechanism 107 may be configured and disposed to provide heat and/or cooling to the external shaft 118.”). Thus, a person of ordinary skill in the art would have been motivated to modify any of the primary references to include this feature. For example, a person of ordinary skill in the art would have recognized that this feature is beneficial because a heat flux directed toward a user’s body can soothe the user’s skin, relax a user’s muscles, and provide therapeutic relief. In addition, heat sources generating a heat flux an energy-efficient form of heating in which the heated portion increases in heat slowly so as to not burn the user and allows the user to become acclimated to the heat. In addition, heat flux, for example, by using resistive heating, is simple to implement and thus a person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have understood that these references disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach claim 7 (“wherein at least one of the plurality of energy generator elements is contained at least partially within a housing that is removably securable to the body”),

it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any of the prior art that claim 7 in Exhibits A-01 to A-13. For example, several prior art references, including at least Rhoades, Schwarz, and Giraud disclose or teach these features. A person skilled in the art would have understood that a massage device having an energy generator at least partially within a housing securable to the body of the massager was well understood, and would have been motivated to incorporate these features into massage devices. *See, e.g.*, Rhoades at 15:33–36, 17:54–56 (“According to embodiments, various treatment attachments or types of treatment attachments may be removably attached or temporarily secured to and removed from head portion 120 of device or tool 110... [A] heating unit may also be disposed [] within a treatment attachment.”); Schwarz at [0082] (“The applicator and/or energy delivery elements (e.g. electrode 48 and/or percussion guide 43) may be detachable. Detaching these elements may ease cleaning the coupling medium (e.g. gel), used to transfer of the electromagnetic field and mechanical stimulation, from the system. Excess coupling medium may build up in a space between the percussion element 43 and electrode by movement of the applicator. Therefore, detaching these parts may provide a more reliable way of cleaning the system.”); Giraud at [0019] (“A massaging appliance described in the invention, as depicted in FIG. 38 and designated overall by Reference A, consists of a massaging head (1), designed to be removable, on a drive unit (2). The massaging head (1) is designed to exert a mechanical action on the skin of the user's face via massaging elements (M) propelled by an electric motor.”); Lee '111 at [0014] (“A massage ball 36 is fixedly or removably attached to the end of the massage rod 22, and a plurality of massage bumps 38 are configured on the surface of the massage ball 36 to enhance the massage effect.”); Barasch at [0042] (“In some embodiments, the shaft 118 and the housing 102 are one and the same (i.e. a single apparatus), or are

substantially contiguously connected. In some embodiments, more than one shaft may be included.”). Thus, a person of ordinary skill in the art would have been motivated to modify any of the primary references to include this feature. For example, a person of ordinary skill in the art would have recognized that a massage device having an energy generator element that is removably securable to the body would be beneficial because the presence of the element in an attachment rather than the device body could permit the body to be more compact. Such an attachment system also provides greater flexibility as different types of energy can be incorporated into each attachment giving the user a wide range of treatment options. A person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have understood that these references disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach the portion of limitation 8[a] (“a body provided with a sensor”) and/or the portion of elements 8[c] (“wherein the sensor is configured to detect additional input data based on a vital sign of the user and transmit the input data for display”) and claim 9 (“wherein the additional input data corresponds to a heart rate of the user”), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any of the prior art that discloses limitations 8[a], 8[c], and/or claim 9 in Exhibits A-01 to A-13. For example, several prior art references, including at least Barasch, Schwarz, Lee ’111, Lee ’874, Castel, and Giraud disclose or teach these features. A person skilled in the art would have understood that a massage device having a sensor, including, for example to monitor vital signs such as heart rate was well understood, and would have been motivated to incorporate these

features into massage devices. *See, e.g.*, Barasch at [0056] (“In embodiments, massager 300 includes at least one detector 308 for monitoring one or more usage parameters. Detector may include, for example, a sensor... In some embodiments, the detector(s) include at least one of a heart rate sensor, a blood pressure sensor, a body temperature sensor, a pulse sensor, a skin conductivity sensor, a moisture sensor, a pressure sensor, a grip pressure sensor, a timer, a temperature setting switch encoder, a vibration setting switch encoder, and a light setting switch encoder. Accordingly, one or more physiological parameters of a user may be measured.”); Schwarz at [0054], [0056] (“The system for skin treatment 20 includes at least one applicator 24... The applicator 24 may preferably contain a sensor unit 26... The sensor unit 26 may contain one or more sensors for sensing temperature, resistance, movement, contact with skin or force applied to skin. The sensor may be invasive or contactless. The sensor may measure one or more physical quantities of the treated tissue and/or untreated tissue.”); Lee ’111 at [0008] (“The automatic percussion massager of the present invention for realizing the aforementioned objects comprises ... a heat wire ... and a body fat sensor for measuring body fat, wherein a temperature sensor for measuring the temperature of the area heated by the heat wire is installed.”); Lee ’874 at [0022] (“[T]he present invention relates to a skin care device comprising:... a second sensing sensor... connected to the control unit to switch the infrared LED, ultraviolet LED, and vibrator in a controlled sequence to drive the infrared LED, ultraviolet LED, and vibrator only upon skin contact; and a first sensing sensor... connected to the control unit to detect the condition of the skin upon skin contact.”); Castel at [0083] (“In one mode of operation, a temperature sensor is coupled to the temperature control element. The temperature sensor can be any of several known devices, for example, a temperature resistance device, thermocouple, or other known temperature sensing device.”); Giraud at [0017]–[0019] (“In a first

method of implementing the massaging appliance described in the invention, the distinguishing means consists of mechanical sensors positioned on at least one type of massaging head and the body... The mechanical sensors cover every mechanical sensor, including electrical contacts that come into contact with one another when the massaging head is attached to the appliance. In a second method of implementing the massaging appliance described in the invention, the distinguishing means consists of magnetic sensors positioned on at least one type of massaging head and the body... They cover every type of magnetic sensor, such as a reed switch in combination with a magnet (or electromagnet or Hall effect sensor). In a third method of implementing the massaging appliance described in the invention, the distinguishing means consists of optical sensors positioned on at least one type of massaging head and the body... They cover every type of optical sensor, such as light sensors and optical, translucent, transparent and reflective surfaces.”); Kang at 4 (“To explain this more specifically, a microprocessor (10) that controls the operation of the entire system by a program according to a control signal input by a user and adjusts the fan motor and the supply current depending on whether the set temperature is reached is provided with a function selection switch means (20) for selecting the cooling/hot function and power ON/OFF, and a skin condition detection means (30) for detecting and determining the condition of the skin is connected and installed to the microprocessor (10).”). Thus, a person of ordinary skill in the art would have been motivated to modify any of the primary references to include this feature. For example, a person of ordinary skill in the art would have recognized that a massage device having a sensor would be beneficial because the sensor could monitor certain vital signs of a user and provide useful feedback to the user as to the need for continued treatment or how the body is responding to certain treatment. A person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary

skill in the art would have understood that these references disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach the portion of limitation 8[a] (“a body provided with... a processing unit configured to receive input data and generate a control signal based on the input data”) and/or the portion of elements 17[a] (“a body provided with... a processing unit configured to receive input data and generate a control signal based on the input data”), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any of the prior art that discloses limitations 8[a] and/or 17[a] in Exhibits A-01 to A-13. For example, several prior art references, including at least Barasch, Lee ’874, Giraud, Choi, Lee ’111, and Rhoades disclose or teach these features. A person skilled in the art would have understood that a massage device having a processing unit that received input data and generated a control signal based on that input data was well understood, and would have been motivated to incorporate these features into massage devices. *See, e.g.*, Barasch at [0046]–[0047] (“User interface 106 comprises a mechanism for massager 100 to receive input from a user (and in some embodiments, to present feedback to the user). In some embodiments, the input may be selection of power on/power off, selection of the vibration settings (e.g., high, medium, or low intensity, or a particular pattern, etc.), and/or selection of other settings such as, for example, a temperature of a heating/cooling mechanism 107 within the massager 100, etc. In some embodiments, massager 100 includes an on-board or attached (via wires or wirelessly) computer 109 including a processor 114, memory 110, and bus 111... Processor 114 is configured and disposed to access instructions stored in memory 110 and execute them to provide one or more of the various

functionalities of massager 100.”); Lee ’874 at [0073] (“[W]hen the power of the skin care device of the present invention is turned on and the contact unit 200 of the skin care device is touched to the skin to be cared for, the control unit knows that the contact unit 200 is touched to the skin by the detection signal of the second sensor 310, and at this time, the control unit gives a signal to the first sensor 300 to operate it, and performs a programmed operation according to the skin condition set based on the detection value of the first sensor 300.”); Giraud at [0122] (“The electric motor (6) is operated by a control unit (10)... The control unit (10) is also connected to a manual control interface (11) that is accessible from the exterior of the body (3). The manual control interface (11) may, for example, include a stop/start switch and/or a means of manually selecting the operating programs.”); Choi at [0040] (“Within the handle part 110, a motor control means is configured for controlling the motor 200. A gun switch 400 is configured to provide a control signal to the motor control means at the position where the finger is placed.”); Lee ’111 at [0019] (“[T]he human body contact member 52 comprises a body fat sensor 54 that measures body fat, a control device 34 that processes data measured by the body fat sensor 54, and a display device 32 that displays the measured body fat value according to a control signal of the control device 34.”); Rhoades at 6:64–7:3 (“Leads 256 and 258 are connected to conductors 253 and 254, respectively, and bring current to/from motor 260. Lead 256 is coupled to circuit board 270 that includes switch 275 to control the operation of motor 260. Switch 275 may be a two-position switch (ON/OFF) or a multiple position switch for operating motor 260 at multiple or veritable speeds.”); Schwarz at [0057] (“The temperature sensor measures and monitors the temperature of the treated tissue. Temperature can be analyzed by a microprocessor control unit 22... The microprocessor control unit 22 may also use algorithms to calculate the deep or upper-most. A temperatures feedback system may control the temperature and based on set/pre-set limits, alert

the operator in human perceptible form e.g. on the user interface 23. In a limit temperature condition, the device may be configured to adjust output power, activate cooling or stop the therapy.”); Castel at [0101] (“At one end of the device are the elements used to provide the desired treatment modality to a treatment site. The desired treatment modality is selected using the display panel 41. The housing has an internal cavity 62 for holding an electric buzzer 60. The buzzer is mounted on the housing so that vibrational energy from the buzzer is transmitted through the housing to the treatment site at a predetermined frequency or range of frequencies. An electronic control module 40 is used to control the [] vibration frequency of the buzzer.”); Gleason at [0026] (“The first exemplary embodiment shown in FIG. 1 also contains elements for controlling operation of the massage device 10. The massage device 10 includes a control panel 40. The control panel 40 may include an on/off switch for either or both of the percussive massage element 28 and for the heating element 18. The control panel 40 may include buttons for controlling the intensity of the percussive force from the percussive massage element 28 and/or the intensity of the heat from the heating element 18. Other controls for controlling the features of the massage device 10 herein described may further be included with the control panel 40. The massage device 10 also includes an electrical cord 42 for receiving power from a wall outlet, although power may be provided alternatively or in combination with a battery.”); Kang at 4 (“To explain this more specifically, a microprocessor (10) that controls the operation of the entire system by a program according to a control signal input by a user and adjusts the fan motor and the supply current depending on whether the set temperature is reached is provided with a function selection switch means (20) for selecting the cooling/hot function and power ON/OFF, and a skin condition detection means (30) for detecting and determining the condition of the skin is connected and installed to the microprocessor (10).”); Roberts at Abstract (“A trigger point

massage therapy device for well-controlled trigger point therapy, suitable for long-term use by a health practitioner with minimal risk of pain or injury, can include a main body with a handle, rubberized grips, a connection pin, that can connect to a pressure point base with a pressure point tip, whereon can further be installed additional pressure point tips in different sizes; a pressure sensor, a step-vibration component, an electro-motor; and additionally heating, ultra sound, electrical stimulation, infrared, and cold laser light components. The device can further include a control unit, which can be used for programming and controlling the functions of the device. Also described is a method for trigger point massage therapy, including measuring a pressure, adjusting the pressure, holding the pressure, rotating/unwinding, vibrating, and increasing the pressure.”); Yamazaki at 4:35–38 (“Here, the control system of the treatment device 1 will be described mainly with reference to Fig. 7. That is, the treatment device 1 includes a tapping drive circuit 34, an iontophoresis circuit 33, a low-frequency supply circuit 32, and a controller 31 that controls each part in an integrated manner based on input operations from the user via the input operation unit 30.”). Thus, a person of ordinary skill in the art would have been motivated to modify any of the primary references to include this feature. For example, a person of ordinary skill in the art would have recognized that a massage device having a processing unit that receives input data and generates a control signal based on that input data would be beneficial because such a feature could modify the functioning of the device based on internal indicators (e.g., to prevent the device from overheating due to high operating temperature) and/or user vital signs (e.g., to decrease the device’s impact intensity because of the user’s increased heart rate) and thereby improve device longevity and/or user safety. In addition, a person of ordinary skill in the art would have been motivated to utilize a processor or controller because doing so would enhance the user’s experience by enabling a simple user interface capable of controlling the

functionality (e.g., type of massage/treatment) and the intensity of each treatment. A person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have understood that these references disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach claim 10 (“comprising a controller configured to modify intensity of the first energy type and the second energy type”), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any of the prior art that discloses claim 10 in Exhibits A-01 to A-13. For example, several prior art references, including at least Barasch, Castel, Giraud, Lee ’874, Schwarz, and Lee ’111 disclose or teach these features. A person skilled in the art would have understood that a massage device having the ability to modify the intensity of its energy generators by using a controller was well understood, and would have been motivated to incorporate these features into massage devices. *See, e.g.*, Barasch at [0046], [0047], [00055] (“[T]he input may be selection of power on/power off, selection of the vibration settings (e.g., high, medium, or low intensity, or a particular pattern, etc.), and/or selection of other settings such as, for example, a temperature of a heating/cooling mechanism 107 within the massager 100, etc.... Processor 114 is configured and disposed to access instructions stored in memory 110 and execute them to provide one or more of the various functionalities of massager 100... Controls 304 may include vibration settings. Additionally, controls 304 may include temperature settings (if the massager includes a mechanism for temperature control, such as a heating/cooling element 107 of FIG. 1) or light settings (if the massager includes a mechanism 308 for illumination).”); Castel at [0011] (“In general, the device

comprises a housing containing a mechanical vibration element, a light source, a heating and/or cooling element, a power source for powering the mechanical vibration element, light source, and heating/cooling element. An electronic control module is used to control the mechanical vibration element, light source, and heating and/or cooling element.”); Giraud at [0007], [0013] (“[T]he control means of said massaging appliance may be configured to act upon the driving means, so as to control, in a coordinated manner, a movement of the aforementioned at least two massaging elements... The movement of the at least two massaging elements can be “coordinated” but not necessarily identical... The movement between the at least two massaging elements may vary, for example, in terms of speed, spin direction and lateral direction... [T]he control means is configured to act upon the wave-emitting system and change the waves according to the type of massaging head attached to the body. This may involve changing the wavelength(s) and/or intensity and/or frequency of the emitted waves, depending on the type of massaging head attached to the body.”); Lee ’874 at [0069] (“The printed circuit board comprises a control unit connected to the keypad 130, the first and second detection sensors 300, 310, and the display window 120 ..., a light emission control unit for controlling the light emission of the infrared LED 210 and the ultraviolet LED 212 according to a control signal from the control unit, and a vibration control unit for controlling the frequency of the oscillator 230.”); Schwarz at [0057], [0059] (“Temperature can be analyzed by a microprocessor control unit 22... A temperatures feedback system may control the temperature and based on set/pre-set limits, alert the operator in human perceptible form e.g. on the user interface 23. In a limit temperature condition, the device may be configured to adjust output power, activate cooling or stop the therapy... The contact and/or force applied by the applicator on the skin surface may be measured piezoresistively, mechanically, optically, electrically, electromagnetically,

magnetically or by other attitudes. The measured information from the contact and/or force sensor may influence the start of the therapy or generation of electromagnetic or mechanic field by treatment units.”); Lee ’111 at [0012], [0018] (“[O]perating power supplied by the power supply unit 12 is transmitted to the motor 14 as the user operates the on/off switch 30 for selecting or deselecting the massage function. The rapid rotational force of the motor 14, which operates as the operating power is supplied, is slowed down to a suitable speed by the gearbox 16 and transmitted to the rotating gear 18, and the rotational force of the rotating gear 18 is transmitted to the engaged linear gear 20 to cause the massage rod 22 formed integrally with the linear gear 20 to reciprocate in a linear line. The linear motion of the linear gear 20 is performed by the gearbox 16, which is adapted to instantaneously change the direction of rotation of the motor 14... A temperature sensor (60) capable of measuring the temperature of the body part being heated by the heat wire (58) and a temperature control switch (28) capable of adjusting the temperature of the heat wire (58) are configured to enable a user to easily adjust a suitable temperature of the compress.”); Rhoades at 6:64–7:3 (“Leads 256 and 258 are connected to conductors 253 and 254, respectively, and bring current to/from motor 260. Lead 256 is coupled to circuit board 270 that includes switch 275 to control the operation of motor 260. Switch 275 may be a two-position switch (ON/OFF) or a multiple position switch for operating motor 260 at multiple or veritable speeds.”); Gleason at [0026] (“The first exemplary embodiment shown in FIG. 1 also contains elements for controlling operation of the massage device 10. The massage device 10 includes a control panel 40. The control panel 40 may include an on/off switch for either or both of the percussive massage element 28 and for the heating element 18. The control panel 40 may include buttons for controlling the intensity of the percussive force from the percussive massage element 28 and/or the intensity of the heat from the heating element 18. Other

controls for controlling the features of the massage device 10 herein described may further be included with the control panel 40. The massage device 10 also includes an electrical cord 42 for receiving power from a wall outlet, although power may be provided alternatively or in combination with a battery.”); Kang at 4 (“To explain this more specifically, a microprocessor (10) that controls the operation of the entire system by a program according to a control signal input by a user and adjusts the fan motor and the supply current depending on whether the set temperature is reached is provided with a function selection switch means (20) for selecting the cooling/hot function and power ON/OFF, and a skin condition detection means (30) for detecting and determining the condition of the skin is connected and installed to the microprocessor (10).”); Roberts at Abstract (“A trigger point massage therapy device for well-controlled trigger point therapy, suitable for long-term use by a health practitioner with minimal risk of pain or injury, can include a main body with a handle, rubberized grips, a connection pin, that can connect to a pressure point base with a pressure point tip, whereon can further be installed additional pressure point tips in different sizes; a pressure sensor, a step-vibration component, an electro-motor; and additionally heating, ultra sound, electrical stimulation, infrared, and cold laser light components. The device can further include a control unit, which can be used for programming and controlling the functions of the device. Also described is a method for trigger point massage therapy, including measuring a pressure, adjusting the pressure, holding the pressure, rotating/unwinding, vibrating, and increasing the pressure.”); Yamazaki at 4:21–32 (“The head portion 3 is provided with cosmetic treatment electrodes 7, 8 that serve as electrodes for ion introduction and electrodes for electrical stimulation, and a tapping mechanism 15 that taps the skin surface that is in contact with the tip surface of the head portion 3 through tapping portions 5a, 5b, 5c. As shown in Fig. 3, a grip electrode 9 that comes into contact with the palm of the user's hand is provided on the

rear portion of the handling portion 2a of the casing 2. As shown in Figs. 3 and 7, the rear portion of the casing 2 is provided with an input operation unit 30 for turning on/off the main power supply and for various settings, and an indicator lamp 10 for indicating the operation mode of the treatment device 1 set by the input operation unit 30. In this embodiment, the indicator lamp 10 is turned on when the tapping mechanism 15 is in operation and turned off when it is not in operation. The input operation unit 30 includes a power/mode selection button 14 for turning the main power supply ON/OFF and the tapping function ON/OFF, and for selectively switching between the iontophoresis function and the electrical stimulation (low-frequency stimulation) function, and adjustment buttons 11, 12 for varying the supply current in the selected operating mode and the level of the tapping force (hitting force).”). Thus, a person of ordinary skill in the art would have been motivated to modify any of the primary references to include this feature. For example, a person of ordinary skill in the art would have recognized that a massage device having the ability to modify the intensity of its energy generators by using a controller would be beneficial because, for energy types where a set range of intensity levels are each more effective for various treatment regimens, this feature would allow users to select the appropriate intensity level for a certain treatment and a separate intensity level that is more appropriate for a different treatment. A person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have understood that these references disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach claim 15 (“comprising a third energy generator element independently operable of the first and second energy generator elements to output a third energy type toward

the area of skin.”), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any of the prior art that discloses claim 15 in Exhibits A-01 to A-13. For example, several prior art references, including at least Barasch, Rhoades, and Castel disclose or teach these features. A person skilled in the art would have understood that a massage device having a third independently operable energy generator element to output a third energy type was well understood, and would have been motivated to incorporate these features into massage devices. *See, e.g.*, Barasch at [0055] (“Controls 304 may include vibration settings. Additionally, controls 304 may include temperature settings (if the massager includes a mechanism for temperature control, such as a heating/cooling element 107 of FIG. 1) or light settings (if the massager includes a mechanism 308 for illumination). Illumination/light source mechanism 308 may include incandescent light, fluorescent light, black light, CFL, light emitting diode (LED), or any other suitable lighting.”); Rhoades at 11:9–25 (“[O]ther treatment attachments include ... a heating unit attachment; a cooling unit attachment; [and] a light source attachment.”); Castel at [0011] (“In general, the device comprises a housing containing a mechanical vibration element, a light source, a heating and/or cooling element, a power source for powering the mechanical vibration element, light source, and heating/cooling element. An electronic control module is used to control the mechanical vibration element, light source, and heating and/or cooling element.”); Schwarz at [0008], [0074] (“Mechanical stimulation includes acoustic, ultrasound and/or shock waves... Applicator 24 includes surface contacting the tissue including one or more energy delivery elements transmitting electromagnetic waves and one or more energy delivery element designed to transmit mechanical stimulation.”); Kang at 2 (“The present invention relates to a portable skin massager, and more specifically, to a portable skin massager that integrates cold, hot, ion, and vibration massage

functions into a single small device, and continuously induces a predetermined range of cold and hot temperatures to expand and contract pores of the skin and maintain skin elasticity.”); Roberts at [0028] (“In further related aspects, the device can also provide heating, cold laser light, infrared, ultrasound, electrical stimulation, and other common therapeutic methods and functions.”). Thus, a person of ordinary skill in the art would have been motivated to modify any of the primary references to include this feature. For example, a person of ordinary skill in the art would have recognized that a massage device having a third energy generator to output a third energy type would be beneficial, as consumers would find this feature appealing because it would make the device more versatile for treatment purposes. A person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have understood that these references disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach limitations 17[c] (“wherein the processing unit is operable to output an optical signal on a display that is observable by eyes of the user, the output corresponding to the control signal”), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any of the prior art that discloses limitation 17[c] in Exhibits A-01 to A-13. For example, several prior art references, including at least Barasch, Lee ’111, Schwarz, Giraud, Lee ’874, and Castel disclose or teach these features. A person skilled in the art would have understood that a massage device having a processing unit and using that processing unit to output an optical signal on a display was well understood, and would have been motivated to incorporate these features into massage devices. *See, e.g.*, Barasch

at [0046], [0047] (“User interface 106 comprises a mechanism for massager 100 to receive input from a user (and in some embodiments, to present feedback to the user). In some embodiments, the input may be selection of power on/power off, selection of the vibration settings (e.g., high, medium, or low intensity, or a particular pattern, etc.), and/or selection of other settings such as, for example, a temperature of a heating/cooling mechanism 107 within the massager 100, etc. In some embodiments, user interface 106 includes at least one of: button, slider switch, screen, keypad, any combination thereof, or any other suitable input interface, now known or hereafter developed... In embodiments including a screen, the screen can be a light-emitting diode (LED) display, liquid crystal display (LCD), plasma, or any other suitable display mechanism. In some embodiments, the screen may be a “touch screen”... In some embodiments, massager 100 includes an on-board or attached (via wires or wirelessly) computer 109 including a processor 114, memory 110, and bus 111... Processor 114 is configured and disposed to access instructions stored in memory 110 and execute them to provide one or more of the various functionalities of massager 100.”); Lee ’111 at [0008] (“[T]he human body contact member 52 comprises a body fat sensor 54 that measures body fat, a control device 34 that processes data measured by the body fat sensor 54, and a display device 32 that displays the measured body fat value according to a control signal of the control device 34, so that a user can visually check the body fat of a specific area and utilize it for more effective body fat removal.”); Schwarz at [0054] (“The microprocessor control unit 22 with user interface 23 provides communication between the electromagnetic field treatment unit 25 and mechanical stimulation treatment unit 27. User interface 23 allows setting up the treatment parameters and also may provide the operator various treatment information. User interface 23 may include display.”); Giraud at [0088] (“The massaging appliance also has, on its body, a user interface (UI) with a screen to display at least

one of the following kinds of data: treatment duration (total, elapsed, remaining), treatment phase and the name of the head distinguished. The UI may also have control buttons (on the screen or mechanical on the casing) so the user can set and select one of the offered programs, to adjust the treatment as the user wishes (within the limits defined by the automatic distinguishing feature.); Lee '874 at [0032] (“The housing 100 may have a printed circuit board (PCB), not shown, embedded inside the housing 100, and the front of the housing 100 may be provided with a keypad 130 comprising a plurality of buttons that can be operated by a user, and a display window 120 in the form of USD that displays the contents of the operation.”); Castel at [0101] (“At one end of the device are the elements used to provide the desired treatment modality to a treatment site. The desired treatment modality is selected using the display panel 41.”); Yamazaki at 4:21–32 (“The head portion 3 is provided with cosmetic treatment electrodes 7, 8 that serve as electrodes for ion introduction and electrodes for electrical stimulation, and a tapping mechanism 15 that taps the skin surface that is in contact with the tip surface of the head portion 3 through tapping portions 5a, 5b, 5c. As shown in Fig. 3, a grip electrode 9 that comes into contact with the palm of the user's hand is provided on the rear portion of the handling portion 2a of the casing 2. As shown in Figs. 3 and 7, the rear portion of the casing 2 is provided with an input operation unit 30 for turning on/off the main power supply and for various settings, and an indicator lamp 10 for indicating the operation mode of the treatment device 1 set by the input operation unit 30. In this embodiment, the indicator lamp 10 is turned on when the tapping mechanism 15 is in operation and turned off when it is not in operation. The input operation unit 30 includes a power/mode selection button 14 for turning the main power supply ON/OFF and the tapping function ON/OFF, and for selectively switching between the iontophoresis function and the electrical stimulation (low-frequency stimulation) function, and adjustment buttons 11, 12 for

varying the supply current in the selected operating mode and the level of the tapping force (hitting force).”); Roberts at [0155] (“An embodiment of the present invention can also include one or more input or output components, such as a mouse, keyboard, monitor, and the like. A display can be provided for viewing text and graphical data, as well as a user interface to allow a user to request specific operations. Furthermore, an embodiment of the present invention may be connected to one or more remote computers via a network interface. The connection may be over a local area network (LAN) wide area network (WAN), and can include all of the necessary circuitry for such a connection.”); Kang at 4 (“The above temperature detection means (50) is composed of a temperature sensor and detects whether the set temperature of the device is reached according to the setting of the function selection switch means (20). The structure of the vibration means is a solenoid-type structure using a magnet and a permanent magnet, and is a structure including a display means (90) that informs the user of the signal detected by the skin condition detection means (30) and the selected function of the function selection switch means (20).”). Thus, a person of ordinary skill in the art would have been motivated to modify any of the primary references to include this feature. For example, a person of ordinary skill in the art would have recognized that a massage device having a processing unit to output an optical signal on a display would be beneficial, as this feature could effectively convey device operation information to sighted users. Such a display could also provide effective real-time feedback to user’s regarding the status of the treatment, how the individual was responding to the treatment, and would be a convenient user interface for controlling the operation of the device. A person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have understood that these references disclose interrelated

teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

IV. U.S. Patent No. 12,097,161 (“the ’161 Patent”)

A. Identification of Prior Art

In addition to the prior art cited on the face of the ’161 Patent and related patents, the admitted prior art in the specifications of the ’161 Patent and related patents, the prior art cited in any file histories of the ’161 Patent and related patents, the prior art cited in any other reexaminations, *inter partes* review proceedings, reissue proceedings, or other examination or post-grant proceedings of the ’161 Patent and related patents, and the prior art cited in any invalidity contentions or expert reports submitted in any action or proceedings involving the ’161 Patent or related patents, Defendant identifies the following prior art that anticipates each asserted claim or renders it obvious.

1. Prior Art Patents

The following patents and patent publications are prior art to the asserted claims under at least 35 U.S.C. § 102 and/or 35 U.S.C. § 103. The identification of any patent or patent publication shall be deemed to include any counterpart patent or application filed, published, or issued anywhere in the world.

Patent or Publication Number	Country of Origin	Filing Date	Date of Issue or Publication
U.S. Patent No. 6,117,092	United States	May 21, 1997	September 12, 2000
US2014/0070957	United States	September 11, 2013	March 13, 2014
US2016/0235980	United States	February 8, 2016	August 18, 2016
US2017/0011602	United States	August 26, 2016	January 12, 2017
US2017/0157431	United States	February 16, 2017	June 8, 2017
US2017/0165485	United States	December 6, 2016	June 15, 2017
US2017/0180535	United States	December 15, 2016	June 22, 2017
US2018/0067558	United States	September 6, 2017	March 8, 2018

Patent or Publication Number	Country of Origin	Filing Date	Date of Issue or Publication
US2019/0015295	United States	July 14, 2017	January 17, 2019
US2019/0070425	United States	August 30, 2018	March 7, 2019
US2021/0178154	United States	February 8, 2021	June 17, 2021
WO2011/057028	United States	November 4, 2010	May 12, 2011
WO2016/201366	United States	June 10, 2016	December 15, 2016
KR1998-0087763	Korea	September 16, 1998	December 5, 1998
KR2002-19489	Korea	October 31, 2000	April 2, 2001
KR2002-41170	Korea	April 30, 2001	October 10, 2001
KR2002-92048	Korea	July 5, 2002	October 18, 2002
KR2003-0053416	Korea	December 22, 2001	June 28, 2003
KR2015-0110067	Korea	March 24, 2014	October 2, 2015
KR2017-0115478	Korea	March 13, 2017	October 17, 2017

B. Primary References

Defendant contends that the primary prior art references identified below and described in the charts attached as Exhibits B-01 to B-15, by themselves, anticipate the asserted claims of the '161 Patent. To the extent that a primary reference is deemed not to anticipate a claim for failing to teach one or more limitations of that claim, Defendant contends that the claim would nonetheless have been obvious to a person of ordinary skill in the art at the time of the invention in view of the prior art reference itself, as described in the attached charts. Moreover, to the extent that a primary reference is deemed, by itself, not to anticipate or render obvious a claim for failing to teach one or more limitations, the claim would nonetheless have been obvious to a person of ordinary skill in the art at the time of the invention by the combination of the primary reference with one or more of the other primary references listed below.

Defendant's prior art charts (attached as Exhibits B-01 thru B-15) set forth the particular claims that are anticipated under 35 U.S.C. § 102 and/or rendered obvious under 35 U.S.C. § 103

by each item of prior art and identify where specifically in each item of prior art, each element of each asserted claim is found.

Exhibit	Primary References
B-01	U.S. Patent Application Publication No. 2016/0235980 (“Berman”)
B-02	U.S. Patent Application Publication No. 2017/0011602 (“Brav”)
B-03	US2017/0157431 (“Cheatham”)
B-04	KR2003-0053416 (“Cho”)
B-05	US2019/0070425 (“Deng”) ³
B-06	U.S. Patent Application Publication No. 2018/0067558 (“Eagleman”)
B-07	KR1998-0087763 (“Jeon”)
B-08	KR2002-41170 (“Jeong”)
B-09	KR2015-0110067 (“Kim”)
B-10	KR2003019489 (“Lee”)
B-11	U.S. Patent Application Publication No. 2014/0070957 (“Longinotti-Buitoni”)
B-12	U.S. Patent Application Publication No. 2019/0015295 (“Marton”)
B-13	US2017/0165485 (“Sullivan”)
B-14	WO2016/2001366 (“Wong”)
B-15	KR2002-92048 (“Yoon”)

C. Obvious Combinations

To the extent that a primary reference is deemed, by itself, not to anticipate or render obvious a claim for failing to teach one or more limitations, the claim would nonetheless have

³Deng is entitled to the effective filing date of September 1, 2017 because the Deng Provisional provides sufficient written description support for the claims recited in Deng as shown in the table in Exhibit B-05.

been obvious to a person of ordinary skill in the art at the time of the invention by the combination of the primary reference with one or more other primary references and/or the knowledge of someone skilled in the art. For example, a person of ordinary skill in the art would have been motivated to combine any reference in Exhibits B-01 to B-15 with any other reference(s) in Exhibit B-01 to B-15. Such combinations would be achieved, for example, by merely combining the disclosures described in the respective claim charts for each reference.

Defendant also contends that any of the primary references could be combined with any other primary reference (or combination of primary references) to render obvious the asserted claims. Such combinations would be achieved by merely combining the disclosures described in the respective claim charts for each reference.

The obviousness combinations are provided in the alternative to Defendant's anticipation contentions and are not to be construed to suggest that any reference included in the combinations is not itself anticipatory.

1. Exemplary Combinations

Below are examples of prior art references that would have been combined by one of ordinary skill in the art at the time of the alleged invention. These combinations are merely examples. The asserted claims of the '174 Patent are rendered obvious by:

- Cho alone or in combination with one or more of Lee, Jeon, Jeong, Kim, Yoon, Cheatham, Deng, Sullivan, Wong, Berman, Brav, Eagleman, Longinotti-Buitoni, and Marton.
- Lee alone or in combination with one or more of Cho, Jeon, Jeong, Kim, Yoon, Cheatham, Deng, Sullivan, Wong, Berman, Brav, Eagleman, Longinotti-Buitoni, and Marton.

- Jeon alone or in combination with one or more Lee, Cho, Jeong, Kim, Yoon, Cheatham, Deng, Sullivan, Wong, Berman, Brav, Eagleman, Longinotti-Buitoni, and Marton.
- Jeong alone or in combination with one or more of Lee, Jeon, Cho, Kim, Yoon, Cheatham, Deng, Sullivan, Wong, Berman, Brav, Eagleman, Longinotti-Buitoni, and Marton.
- Kim alone or in combination with one or more of Lee, Jeon, Jeong, Cho, Yoon, Cheatham, Deng, Sullivan, Wong, Berman, Brav, Eagleman, Longinotti-Buitoni, and Marton.
- Yoon alone or in combination with one or more of Lee, Jeon, Jeong, Kim, Cho, Cheatham, Deng, Sullivan, Wong, Berman, Brav, Eagleman, Longinotti-Buitoni, and Marton.
- Cheatham alone or in combination with one or more of Lee, Jeon, Jeong, Kim, Yoon, Cho, Deng, Sullivan, Wong, Berman, Brav, Eagleman, Longinotti-Buitoni, and Marton.
- Deng alone or in combination with one or more of Lee, Jeon, Jeong, Kim, Yoon, Cheatham, Cho, Sullivan, Wong, Berman, Brav, Eagleman, Longinotti-Buitoni, and Marton.
- Sullivan alone or in combination with one or more of Lee, Jeon, Jeong, Kim, Yoon, Cheatham, Deng, Cho, Wong, Berman, Brav, Eagleman, Longinotti-Buitoni, and Marton.

- Wong alone or in combination with one or more of Lee, Jeon, Jeong, Kim, Yoon, Cheatham, Deng, Sullivan, Cho, Berman, Brav, Eagleman, Longinotti-Buitoni, and Marton.
- Berman alone or in combination with one or more of Lee, Jeon, Jeong, Kim, Yoon, Cheatham, Deng, Sullivan, Wong, Cho, Brav, Eagleman, Longinotti-Buitoni, and Marton.
- Brav alone or in combination with one or more of Lee, Jeon, Jeong, Kim, Yoon, Cheatham, Deng, Sullivan, Wong, Berman, Cho, Eagleman, Longinotti-Buitoni, and Marton.
- Eagleman alone or in combination with one or more of Lee, Jeon, Jeong, Kim, Yoon, Cheatham, Deng, Sullivan, Wong, Berman, Brav, Cho, Longinotti-Buitoni, and Marton.
- Longinotti-Buitoni alone or in combination with one or more of Lee, Jeon, Jeong, Kim, Yoon, Cheatham, Deng, Sullivan, Wong, Berman, Brav, Eagleman, Cho, and Marton.
- Marton alone or in combination with one or more of Lee, Jeon, Jeong, Kim, Yoon, Cheatham, Deng, Sullivan, Wong, Berman, Brav, Eagleman, Longinotti-Buitoni, and Cho.

2. Motivations to Combine

To the extent a finder of fact finds that a primary prior art reference does not disclose one or more limitations of an asserted claim, the asserted claim is nevertheless obvious because the alleged missing limitations contain nothing beyond ordinary improvements. In other words, the asserted claim combines known elements to achieve predictable results or chooses between clear

alternatives known to those of skill in the art, particularly in view of the state of the art as reflected in the relevant prior art.

Moreover, as explained above, it would have been obvious to a person of skill in the art at the time of the alleged invention of the asserted claims to combine any primary reference with any combination of other primary references so as to practice the asserted claims. To the extent that Plaintiff argues that any concept claimed in the asserted claims is not disclosed in a primary reference, it would, at a minimum, have been obvious to adapt the primary reference to include the concept or combine it with other primary references that disclose the concept. Each concept described and claimed in the Asserted Patents was known to those of skill in the art as available design choices for wearable devices.⁴

The Supreme Court has held that “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007). “When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one.” *Id.* at 417. As the Supreme Court made clear, “[f]or the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *Id.*

To determine whether there is an apparent reason to combine the known elements in the fashion claimed by the patent at issue, a court can “look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace;

⁴ Each concept described and claimed in the ’161 Patent was known to those of skill in the art as available design choices for wearable devices.

and the background knowledge possessed by a person having ordinary skill in the art.” *Id.* at 418. For example, obviousness can be demonstrated by showing “there existed at the time of invention a known problem for which there was an obvious solution encompassed by the patent’s claims.” *Id.* at 420. “[A]ny need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *Id.* Common sense also teaches that “familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.” *Id.*

However, the Supreme Court in *KSR* held that a claimed invention can be obvious even if there is no explicit teaching, suggestion, or motivation for combining the prior art to produce that invention. In summary, *KSR* holds that patents that are based on new combinations of elements or components already known in a technical field may be found to be obvious. *See, generally, KSR*, 550 U.S. 398. Specifically, the Court in *KSR* rejected a rigid application of the “teaching, suggestion, or motivation [to combine]” test. *Id.* at 418. “In determining whether the subject matter of a patent claim is obvious, neither the particular motivation nor the avowed purpose of the patentee controls. What matters is the objective reach of the claim.” *Id.* at 419. “Under the correct analysis, any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *Id.* at 420. A key inquiry is whether the “improvement is more than the predictable use of prior art elements according to their established functions.” *Id.* at 417.

The rationale to combine or modify prior art references is significantly stronger when, as here, the references seek to solve the same problem, come from the same field, and correspond well to each other. *In re Inland Steel Co.*, 265 F.3d 1354, 1362 (Fed. Cir. 2001). The Federal

Circuit has held that two references may be combined as invalidating art under similar circumstances, namely “[the prior art] focus[es] on the same problem that the . . . patent addresses: enhancing the magnetic properties of . . . steel. Moreover, both [prior art references] come from the same field . . . Finally, the solutions to the identified problems found in the two references correspond well.” *Id.* at 1364 (concerning patents and prior art relating to improving the magnetic and electrical properties of steel).

In view of the Supreme Court’s *KSR* decision, the PTO issued a set of Examination Guidelines. Examination Guidelines for Determining Obviousness Under 35 U.S.C. §103 in view of the Supreme Court Decision in *KSR International Co. v. Teleflex, Inc.*, 72 Fed. Reg. 57526 (October 10, 2007). Those Guidelines summarized the *KSR* decision and identified various rationales for finding a claim obvious, including those based on other precedents. Those rationales include:

- (A) Combining prior art elements according to known methods to yield predictable results;
- (B) Simple substitution of one known element for another to obtain predictable results;
- (C) Use of known technique to improve similar devices (methods, or products) in the same way;
- (D) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
- (E) “Obvious to try” – choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;
- (F) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art;
- (G) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

Id. at 57529. The above rationales likewise apply in rendering obvious the asserted claims of the Asserted Patents.

The references disclosed herein, alone or in combination, contain an explicit and/or implicit teaching or motivation to combine them due to the following: (1) the knowledge generally available to a person of ordinary skill in the art; (2) the prior art references as understood by a person of ordinary skill in the art; (3) the nature of the problem to be solved; (4) the fact that each prior art reference addresses similar problems; and (5) the knowledge of those skilled in the art that the disclosed elements had been or could be used together.

As an example of those reasons and motivations to combine the references, the primary references identified in Section IV.B, generally relate to wearable devices, and in particular to wearable devices capable of transmitting a variety of types of energy towards a user's skin. *See* Ex. B-01 to B-15. The references disclose similar components and techniques for applying percussive massage to a user. *Id.* The attached charts in Ex. B-01 to B-15 provide additional reasons and motivations to combine the charted references.

Additionally, the primary references listed above are analogous art. They are all directed to wearable devices for treatment or communication, and in particular to wearable devices with the ability to transmit various types of energy toward the user's skin:

- Deng at [0001] (“The present invention generally relates to a system which utilizes light therapy in the treatment of musculoskeletal pain, reduction of edema and inflammation, and promoting the healing of tissues, especially soft tissues like muscle, tendons, and ligaments. More specifically, the invention relates to a system with a durable energy subsystem, a replaceable thermal subsystem, and a

means to couple the durable energy subsystem and the replaceable thermal subsystem to a desired treatment area of a user's body.”).

- Sullivan at Abstract (““Systems and methods for non-invasive management of head pain are disclosed. The system includes a headgear configured to be worn on a patient's head. The headgear can include a base and an extension coupled to the base, and a number of therapy devices removably or adjustably attached to the base or the extension. The therapy devices can deliver various modes of therapeutic energy at respective target sites on the head, including neuromodulation of peripheral pain pathways and/or the cerebral cortex, and therapy modalities to facilitate or enhance the neuromodulation effects. The system can include a portable device that enables the user to control the therapy devices on the headgear. The user can use the portable device to optionally access a web-based repository to acquire information about headgear usage from other users, and use that information to guide the programming of the therapy devices.”).
- Cheatham at Abstract (“Embodiments disclosed herein relate to a garment system including a flexible compression garment, at least one sensor, and at least one therapeutic stimulation delivery device operable responsive to sensing feedback from the at least one sensor, effective to provide therapeutic radiation to a body part of a subject. Embodiments disclosed herein also relate to methods of using such garment systems.”).
- Wong at Abstract (“A system and method for providing therapy to a patient can include a monitoring unit and a therapy unit. The monitoring unit can have a user

interface and one or more sensors to measure patient data. The therapy unit can have a stimulator for generating electrical stimulation and a microcontroller for controlling the generation of the electrical stimulation based on the measured patient data.”).

- Jeon at 4:9-16 (“The main purpose of the present invention is to provide a cosmetic massage mask which forms a cosmetic massage mask, pulverizes carbon generating ions and far-infrared ray radiation chain jade, mixes the carbon and far-infrared ray radiation chain jade with gel cosmetic cream at a predetermined ratio, puts the carbon and far-infrared ray radiation chain jade into the cosmetic massage mask, and arranges heating lines to increase the amount of far-infrared ray radiation of the jade, thereby providing an appropriate temperature and humidity on the skin and inducing the discharge of waste water.”).
- Lee at 3:1–9. (“As described above, the massage mask according to the present invention can be controlled by the control unit by dispersing and installing a plurality of electromagnet-bybraders, thermoelectric elements, and far-infrared lamps at a predetermined position of the body made of a flexible material so as to be easily in close contact with each other along the curved line of the face. Since the body can be detachably fixed to the head by using a plurality of connection bands integrally installed in the body, the massage mask according to the present invention can be used not only in a standing position (an active position) but also in a standing position (an active position) but also in a massage effect by the electromagnetby-braders, the thermoelectric elements, and the far-infrared lamps.”).

- Cho at 2:20–27. (“The purpose of the present invention is to provide a hair follicle having a functional function, and the purpose of the present invention is to provide a hair follicle having a functional function, wherein a far-infrared ray rod is mounted on a plurality of protrusions formed inside the hair follicle to vibrate an inner skin, so that the far-infrared ray rod mounted on the protrusions comes in contact with two skins and gives light stimulation to relieve mental fatigue whenever the inner skin vibrates, and to relieve mental stress in a door when aging of the two skins and blood circulation are well performed by stimulating the two skins, and to prevent hair loss, which is a distress distance of modern people, in advance.”).
- Jeong at 4:14-5:4 (“As described above, the multi-functional pneumatic van in the present invention has the effect of removing lesions in capillary vessels and increasing blood flow by installing the blood pressure gauge and the compression van in a ring-shaped van draw on a certain portion of the human body, supplying compressed air, and simultaneously supplying vibration energy to the blood vessels while repeating compression and relaxation. To this end, infrared fever, heat insulation, and the bioactive effects of ore pomegranate are added to significantly increase the blood flow of modern humans, which is exacerbated by hyperlipidemia-type life and motor deficiency, thereby improving health, recovering increased stress and brain fatigue without drugs, and preventing cardiovascular diseases, heavy winds, and dementia, thereby greatly contributing to the improvement of national health. In addition, only a pneumatic band and a manual pump use a blocking function of an air valve to enable a patient to perform

pressure in a short time without giving pain to the patient instead of a compression bandage of a patient with acupoints or fractures in an emergency, or an air cushion of a long distance traveler, an expansion of a narrow space in which a backrest and a hydraulic tool cannot be used, or a multi-functional compression, expansion, and binding tool can be used. In addition to the effect of blood flow improvement, the head band can be combined with a general earphone and an eye band in which a brain wave sensing electrode and a light emitting element are installed, thereby providing convenience used for various purposes such as a feedback type brain wave control or a learning assistance function without separate optical stimulation glasses based on the sensed brain wave.”).

- Yoon at 2:23-28 (“As described above, according to the present invention, the mask is formed of silicon to have a good wearing feeling, and the inner and outer pads are coupled to the coupling groove by the coupling protrusion, and the connection end portion thereof is smoothly treated, thereby providing a massage mask having excellent usability. In the present invention, since the coupling groove of the pad and the coupling protrusion are inserted and coupled, it is easier to manufacture the mask than a conventional mask formed by thermally fusing the pad.”).
- Kim at 2:14-20 (““The present invention relates to a front face massage device and, more specifically, to a front face massage device which can prevent and treat eye diseases such as eyesight and dry eye syndrome by efficiently stimulating the skin muscles of the eyes with a multi-functional (complex) acupressure effect consisting of a vibration motor (vibration massage), an air tube (air pressure

massage), and a heating wire (hot heat massage) around the eyes of a human body, and can improve ball sagging and remove wrinkles through ball massage through air pressure.”).

- Brav at Abstract (“Embodiments include wearable haptic feedback devices and methods of fabricating wearable haptic feedback devices. In an illustrative embodiment given by way of non-limiting example, a wearable haptic feedback device includes: a wearable neckwear band; a plurality of haptic elements disposed about the band in a spaced-apart manner and configured to provide haptic feedback to a user; and an interface circuit configured to operatively couple each of the plurality of haptic elements individually to an electronic system.”).
- Berman at [0094] (“Referring now to FIG. 4, in certain cranial directed energy implementations, a cranial directed energy emission device 80 may include a harness, straps, skull cap, helmet, cap, band or other support structure suitable for positioning energy emitting portals 84 proximate to a surface area of a subject's skull 82. The cranial directed energy emission device 80 is in logical communication with a controller 34. The energy emitting portals 84 are positioned to direct emitted energy towards a cranium such that the directed energy may provide therapeutic impact on the skull (that is, the bone and constituents thereof such as red blood cells) as well as the underlying neuronal and other cellular constituents of the brain within the skull. In some embodiments, energy emitting portals 84 may be arranged in an array 86 wherein respective energy emitting portals 84 may be selected for transmission of directed energy at a particular instance of time relative to a treatment profile. Positioning of the energy emitting

portals 84 proximate to the subject's skull 82 may if preferable be accomplished via fastening techniques allowing for removal with relative ease, while at the same time securing the energy emitting portals 84 relative to portions of the cranium of the subject during administration of a treatment session. Fastening techniques may therefore include, by way of non-limiting example: Velcro™, elastic constraints, stretchable fabric, a hard shell skull cap, a soft shell skull cap, an adjustable harness, and the like.”).

- Longinotti–Buitoni at Abstract. (“An wearable communications garment that includes one or more user-selectable inputs integrated into the garment. A sartorial communications apparatus may include a flexible material that is worn (e.g., as an undergarment) by the user and includes one or more interactive sensors that may be manually activated by a user, even through one or more intervening layers of clothing. The apparatus may also include one or more additional body sensors configured to sense a user's position, movement, and/or physiological status. The sensor(s) may be connected via a conductive trace on the garment to a sensor module for analysis and/or transmission. Methods of manufacturing the garments as well as methods of using the garments are also described.”).
- Eagleman at [0014] (““The method 100 preferably functions to transform input signals associated with at least one sensory modality (e.g., audio signals containing communication-related information, audio signals containing other information, signals containing information associated with vision, signals containing information associated with the sensation of touch, signals containing information associated with tastes, signals containing information associated with

smells, etc.) into stimuli provided using a device in proximity to or otherwise worn by a user, wherein the stimuli are associated with signal processing outputs of a different domain, dimensionality, and/or rate than the input signals. The method 100 can be used for users without sensory conditions (e.g., having sensory sensitivity within a typical range) but for whom receiving of information from multiple sensory sources is desired (e.g., to enhance perception and/or enjoyment of the information). The method 100 can additionally or alternatively allow a user with one or more sensory conditions (e.g., reduced sensory sensitivity, enhanced sensory sensitivity, lacking sensitivity in one or more sensory modalities, etc.) to receive information that would otherwise be received through the one or more senses.”).

- Marton at Abstract (““A system applies compression, vibration and heat to a body part of a person. The system includes a portable vibration and heat generation apparatus having a flexible support platform and a bag-like enclosure extending from the support platform. A cylindrical control unit is mounted to the support platform and extends perpendicularly from the support platform. The control unit has a diameter of between 50 millimeters and 100 millimeters. The control unit houses electronic circuitry and at least one battery. Four vibration pods extend from the support platform into the bag-like structure. The bag-like structure also houses a heat generation unit. The control unit extends through a circular bore in a compression wrap. The compression wrap is securable to a body part with a distal wall of the bag-like enclosure against the body part. The system selectively applies vibration, heat or a combination of vibration and heat to the body part.”).

One of skill in the art would also have been motivated to combine the different publications and patents that were authored by employees of a given company or assigned to the same assignee and/or related to the same subject matter. Additionally, one of skill in the art would have been motivated to combine different references that were authored, developed, or invented by the same individual(s) related to the same subject matter. The common inventor/author/architect of the references demonstrate that they relate to continued work in a common field of effort and continued related developments in that field. One of skill in the art would, therefore, combine the references related to each individual. Additionally, based on the teachings of the references and/or the knowledge of one of ordinary skill, one of skill in the art would have been motivated to combine different references from the same company. And, one of skill in the art would have been motivated to combine prior art systems or products with any related or applicable documentation or literature for that system, including for the reason that these materials are related.

In addition, below are additional motivations to combine prior art for particular claim limitations. The following discussion of specific claim limitations are merely examples and are not limiting.

For example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach limitation 1[a] (“a body including a flexible material layer such that the body is conformable about a head of a user, the body having a power source”) and/or the portion of elements 14[a] (“a body including a flexible material layer conformable about a head of a user, the body having a power source”), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any of the prior art that discloses limitations 1[a] and/or 14[a] in Exhibits B-01 to B-15. For example, several prior art

references, including at least Deng, Cheatham, and Sullivan disclose or teach these features. A person skilled in the art would have understood that a wearable device having a body including a flexible material layer and a power source was well understood, and would have been motivated to incorporate these features into wearable devices. *See, e.g.,* Deng at [0113] (“In this embodiment, main body 610 is a printed circuit board (PCB). A PCB mechanically supports and electrically connects electronic components using conductive tracks, pads and other features etched from copper sheets laminated onto a non-conductive substrate. Components (e.g. capacitors, resistors, controllers, or active devices) are generally soldered on the PCB. This embodiment uses an advanced PCB board in which may of the components are embedded in main body 610 substrate. In this embodiment, main body 610 is flexible, so that it can conform to the treatment area of a user's body.”); Cheatham at [0044] (“The flexible compression garment 102 can be made from any suitable material. For example, the flexible compression garment 102 can be made from neoprene, nylon, synthetic rubber, or any other suitable synthetic or natural fabric, film, or polymeric material.”); Sullivan at [0055] (“The cover 220 may be made of fabric, polymer, or other flexible material to securely interconnect the base 210 and the frame element 230. The frame element 230, which is an embodiment of the frame element of the headgear 110, may be detachably and adjustably connected to the base 210 via one or more connectors such as located inside the controller compartments 240A-B. In an example, the connectors may include a swivel or other rotatory couplings between the base 210 and the frame element 230 to enable the frame element 230 to rotate, with respect to the base 210, toward the anterior or posterior side of the head.”); Brav at [0011] (“In another illustrative embodiment given by way of non-limiting example, a wearable haptic feedback device includes: a wearable neckwear band made of an elastomeric material, the wearable neckwear band being shaped to rest proximate a user's

collarbone, the wearable neckwear band being further shaped to rest proximate a user's spine; a plurality of haptic elements disposed about the band in a spaced-apart manner and configured to provide haptic feedback to a user; and an interface circuit configured to operatively couple each of the plurality of haptic elements individually to an electronic system.”); Marton at [0041] (“As used herein, “bag-like structure” refers to various shapes the lower structure 112 may have when in use because the lower structure comprises a fabric material that is readily deformable to conform the material to irregular shapes. When the lower structure and the upper support structure 116 are resting on a flat surface, the lower structure has a selected general shape defined by its outer dimensions such that a flexible distal (e.g., lowermost in the illustrated orientation) wall 134 of the lower structure is generally parallel to the upper support structure. The actual shape of the lower structure varies in response to the current shape of the upper support structure. For example, when the outer edges of the upper support structure are bent downward, the distal wall of the lower structure may sag away from the upper support structure. On the other hand, when the upper support structure is positioned on a person's knee or other curved body part, the flexible distal wall of the lower structure easily deforms to conform to the irregular curvature of the body part.”); Eagleman at [0026] (“The fastener and housing can be of unitary construction or otherwise physically coextensive, or can be otherwise connected, coupled, or couplable. The fastener is preferably operable to be easily and/or repeatably fastened and unfastened manually by the user, and in specific examples, can include a latch, snap, buckle, clasp, hook-and-loop fastening mechanism, and/or any other suitable fastening mechanism, and/or can be operable to expand and contract (e.g., including an elastic element, such as an expansion band; including a deployment clasp, butterfly clasp, or other clasp that is physically coextensive when unclasp ed; etc.).”); Lee at 3:26-41 (“As shown in FIGS. 2 and 3, the massage mask according to the present

invention is composed of a body 30 made of a spandex material, which is naturally in close contact along a curved line of a face, wherein a pair of left and right eye opening holes 31 are bored at a predetermined interval at an upper end height of the body 30, and a nose opening hole 32 and a mouth opening hole 33 are bored at a middle height and a lower end height of the body 30.”); Wong at [0084] (“In some embodiments, the foam material is flexible and compressible and can conform to the patient’s skin”); Yoon at 1:23-25 (“The present invention relates to a massage mask and, more specifically, to a massage mask which is made of silicone, has excellent wearing sensation, has excellent usability, and is easily manufactured.”). Thus, a person of ordinary skill in the art would have been motivated to modify any of the primary references to include this feature. For example, a person of ordinary skill would have recognized that users are more likely to enjoy and use wearable devices comprised of flexible materials such that they conform to the user’s body. In addition, such materials allow more consistent and effective contact points between the user’s skin and the energy generator elements. A person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have understood that these references disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach limitation 1[b] (“an attachment element including a band to maintain the body about the head of the user and a skin facing surface of the body against skin of the user”), 14[b] (“an attachment element including a headband to maintain a skin facing surface of the body against skin of the user”), and/or claim 9 (“wherein the band is a headband”), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine

the primary reference with any of the prior art that discloses limitations 1[b], 14[b], and/or claim 9 in Exhibits B-01 to B-15. For example, several prior art references, including at least Deng, Cheatham, Sullivan, and Wong disclose or teach these features. A person skilled in the art would have understood that a wearable device having an attachment element, such as a headband, to maintain a surface facing the skin of the user was well understood, and would have been motivated to incorporate these features into wearable devices. *See, e.g.*, Deng at [0152] (“Although in this embodiment adhesive disposed on second surface 964 of tabs 960 of belt 950 acts as a means to couple dual modality system 900 to a desired treatment area of a user's body, there are other possible a means to couple dual modality system 900 to a desired treatment area of a user's body. These include a wrap, sleeve, band, mechanical attachment, belt, laces, and combinations thereof.”); Cheatham at [0105] (“The at least one flexible compression garment 902 can be similar or identical to any of the flexible compression garments disclosed herein, in one or more aspects (e.g., material(s), wearable configuration, etc.). The at least one flexible compression garment 902 can include an interior surface defining an interior space sized and positioned to receive the at least one body part 104. That is, the at least one flexible compression garment 902 can be sized, shaped, and otherwise formed to be worn on at least one body part 104 of a subject 106. For example, the at least one flexible compression garment 902 can include a portion that is substantially tubular and configured to generally conform to the at least one body part of the subject 106, wherein the at least one body part includes at least a portion of an arm, at least a portion of an elbow, at least a portion of a forearm, at least a portion of a wrist, at least a portion of a hand, at least a portion of a finger, at least a portion of a thigh, at least a portion of a knee, at least a portion of a lower leg, at least a portion of an ankle, at least a portion of a foot, at least a portion of a toe, at least a portion of a neck, at least a portion of the head (including the

jaw), at least a portion of a back, at least a portion of a spine, at least a portion of a torso, at least a portion of a waist, at least a portion of a gluteal region, at least a portion of the abdominal region, or at least a portion of a chest of the subject 106.”); Sullivan at [0070] (“FIGS. 4A-B illustrate, by way of example and not limitation, an example of a therapeutic headgear 400 and a part of the environment in which the therapeutic headgear 400 can be used. In particular, FIG. 4A illustrates the front view, and FIG. 4B illustrates the back view, of the therapeutic headgear 400 when it fits to a patient's head. The therapeutic headgear 400, which is an embodiment of the headgear 110 in FIG. 1, may include a number of detachable frame elements 430A-E each curved to conform to at least a portion of a circumference of the head. The frame elements 430A-E may each include one or more therapy devices removably or adjustably attached to the respective frame element. The frame elements 430A-E may be made of elastic material to allow the attached therapy devices to be in close contact with the target sites on the scalp or skin, while the therapy devices are securely held onto the respective frame element.”); Wong at [0049] (“In some embodiments, the wearable monitor unit 12 can have a housing with a user interface 22 that encloses one or more sensors 24. In some embodiments, the wearable monitor 12 can be used to detect and/or measure tremor. In some embodiments, the wearable monitor 12 can have one or more electrodes 26 located on the base of the housing that makes contact with the patient’s skin. In addition or alternatively, the wearable monitor 12 can have a band 28 or other securement feature with one or more electrodes on the skin facing side of the band 28. In some embodiments, the wearable monitor unit 12 has 2 or 3 electrodes, or at least 2 or 3 electrodes. In some embodiments, the wearable monitor unit 12 lacks a power source and relies on the power source 18 in the therapy unit 14 for power. In other embodiments, both the wearable monitor unit 12 and the therapy unit 14 have power sources. In some embodiments, only the wearable monitor

unit 12 has a power source and the therapy unit relies on power from the monitoring unit.”); Brav at [0072] (“In one embodiment, elements 102 are equally spaced about band 106. In other embodiments, elements 102 are selectively positioned along band 106 so as to correspond in location to desired parts of a user's body (e.g., an ear or temple area of the head, a wrist, etc.). The size of band 106 may be varied to fit various users or body parts (e.g., a head, a wrist, an ankle, a waist, etc.) and/or to accommodate various types of elements 102.”); Berman at [0094] (“Referring now to FIG. 4, in certain cranial directed energy implementations, a cranial directed energy emission device 80 may include a harness, straps, skull cap, helmet, cap, band or other support structure suitable for positioning energy emitting portals 84 proximate to a surface area of a subject's skull 82.”); Longinotti–Buitoni at [0020] (“A flexible garment may include a shirt, pants, underwear, a hat, etc. It may be made of any comfortable material that can support components such as haptic actuators, sensors, and a sensor module. Such components may be flexible and/or conformable in one or more dimensions so as to maintain the comfort of the garment.”); Jeong at 8:4-6 (“As shown in FIGS. 2 and 3A to 3D, the pneumatic van support having such a structure is manufactured in a shape suitable for a wearing portion such as an arm, a leg, a waist, a head, and a shoulder.”); Kim at 3:10-14 (“For eye health, two vibration motors on the eyes and two vibration motors under the eyes are mounted inside the vibration frame 30, and a pressure control head band is provided on both sides of the vibration frame 30 to control the pressure of the finger pressure (hot-heat fomentation, air pressure, and vibration massage), so that the pressure control head band can be conveniently controlled according to the shape of each individual's face.”). Thus, a person of ordinary skill in the art would have been motivated to modify any of the primary references to include this feature. For example a person of skill in the art would have recognized that a band is a convenient attachment element that can easily be

adapted to maintain a skin contacting surface against the skin of a user and that a band is a comfortable and inexpensive way of achieving this end. A person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have understood that these references disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach limitations 1[c] (“a plurality of energy generators being independently operable to convert electricity from the power source into a plurality of different energy types transmittable towards the skin of the user”) and/or 14[c] (“a plurality of energy generators being independently operable to convert electricity from the power source into a plurality of different energy types transmittable towards the skin of the user”), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any of the prior art that discloses limitations 1[c] and/or 14[c] in Exhibits B-01 to B-15. For example, several prior art references, including at least Deng, Cheatham, and Sullivan disclose or teach these features. A person skilled in the art would have understood that a wearable device having a plurality of independently operable energy generators to convert electricity from the power source into different energy types and to transmit those energies towards the skin of the user was well understood, and would have been motivated to incorporate these features into wearable devices. *See, e.g.*, Deng at [0114] (“A controller or set of controllers in the durable energy subsystem 600 are used to control the energy delivery from durable energy subsystem 600 to desired treatment area of a user's body. The energy from the dual modality system may be delivered continuously, discontinuously, or may be delivered intermittently.”); Cheatham at

[0199] (“The at least one flexible compression garment 1102 can include one or more TSDDs 910 on, or at least partially embedded therein. The one or more TSDDs 910 can be as describe above. For example, the one or more TSDDs 910 can include ultrasonic emitters (e.g., ultrasound transceiver) and/or steerable TSDDs. The one or more TSDDs can be selectively controlled as described herein, such as in addition to or alternatively to the at least one medicament delivery device 140. For example, the control system 1112 can selectively control the one or more TSDDs 910 via one or more of actuation signals 116 or aiming instructions 117. The control system 1112 can selectively control the one or more TSDDs 910 to apply therapeutic radiation to the at least one body part 104 or a selected region thereof, responsive to one or more sensing signals or a determination based thereon. The control system 1112 can selectively control the one or more TSDDs 910 to apply therapeutic radiation to a selected region of the at least one body part where the medicament 142 is or was dispensed, such as to activate the at least one medicament 142 or change a viscosity or other property thereof. The control system 1112 can selectively control the one or more TSDDs 910 to apply therapeutic radiation to a selected region of the at least one body part where the medicament 142 is not or was not dispensed.”); Sullivan at [0091] (“FIG. 9 illustrates, by way of example and not limitation, an example of a mobile communication device 900 for controlling a headgear for head pain management, such as the headgears 200, 300, 400, or 710, via a wired or wireless connection. The mobile communication device 900, such as a mobile phone, can be an embodiment of the portable device 720. The mobile communication device 900 may include a display 910 and a number of user input devices such as touch-screen controls 920A-B. The display controls 920A can enable the user to select or adjust the presentation on the display 910. The mobile communication device 900 can execute software, such as a mobile application (“App”), to enable the user to establish communication with the

headgear, activate or deactivate one or more therapy devices on the headgear, and adjust therapy parameters for one or more therapy devices. The software or the mobile App may provide the user with the capability to modify, save, recall, or adaptively learn the most preferred therapy-parameter sets for each individual. In an example, the App can automatically learn over time by monitoring patient preferences during head pain therapy sessions (such as therapy device positioning within the headgear, therapy type, therapy parameters, etc.), and make suggestions for individualized parameter values that are tailored to the user. The App can store the information about the learned therapy sessions such as specific locations of the therapy devices, device types at respective location, or therapy parameters, among others. For example, the system would recognize that a tDCS therapy device was programmed and used at a specific location along the headgear. If a patient tries to recall and reuse that same therapy session, but had the tDCS therapy device in a different location or programmed with different parameters, the App may alert the patient of that situation. The mobile communication device 900 can optionally control the physiological sensors 817 for collecting physiological signals.”); Brav at [0089] (“According to an example embodiment, elements 102 of feedback device 100 (e.g., haptic elements, visual elements, audible elements, etc.) are activated based on conditions or settings within the game corresponding with the event data and/or actions taken by the primary and secondary object (e.g., indicated by the first data and the second data, etc.). The use and/or availability of feedback with a game may be controlled by control system 20 responsive to the event data, the first data, and/or the second data. In one embodiment, the availability of feedback is based on the game level/situation or a change thereof. By way of example, feedback may be disabled or scrambled (e.g., false feedback provided, miscalibrated, etc.) by control system 20 during a portion of a game to increase the difficulty. By way of another example, feedback may

be disabled during a situation where the primary object (e.g., virtual character) becomes disoriented (e.g., from a flash bang grenade in a war game, etc.). By way of yet another example, as the user progresses through the game and reaches new checkpoints, milestones, and/or levels, the availability of the feedback may change (e.g., decrease, increase, etc.). For example, feedback may be disabled or hindered during a portion of the game when the primary object controlled by the user is facing a boss character or a character with a feature/ability/perk to disable/hinder feedback abilities.”); .Berman at [0069] (“Further, the method may include a step of delivering one or more types of directed energy 32a, 32b, 32c, 32d from a specific selection of energy portals 30a, 30b, 30c, 30d for a predetermined period of time with a predetermined energy level. Accordingly, a controller 34 in logical communication with the source of directed energy 26 may be operative to cause the source of directed energy 26 to provide a predetermined directed-energy therapy to at least some of the energy emitting portals 30a-30d. Further, the specific selection of energy portals 30a-30d may include less than all of the energy emitting portals 30a-30d. The controller 34 may include a processor and digital data storage.”); Marton at [0088] (“Any of the three vibration modes can be selected in combination with any of the three heat modes. Furthermore, a vibration mode may be selected without selecting a heat mode; and a heat mode may be selected without selecting a vibration mode.”); Jeon at 6:12-14 (“In addition, when it is desired to select each function, the switch corresponding to each function may be turned on (ON), and if it is desired to be driven for the entire function, only one function selection switch (SW 1) may be turned on.”); Eagleman at [0030] (“Each tactile interface device (and/or other output unit) is preferably controlled by independent signals and configured to actuate independently from the other output units. Alternatively, a group of output units (e.g., a cluster or subset of the output units) can be independently controlled, such that the group of output units can operate

independently from the other output units. Each controlled subset (e.g., individual output unit or cluster) can include one or more output units of the same or different types. In variations, in addition to or in alternative to controlling subsets of actuators (e.g., overlapping and/or disjoint subsets) to convey information as a function of features (e.g. in a first group for a first phoneme; in a second group, including only actuators not included in the first group, for a second phoneme; in a third group, including a subset of actuators of the first and second groups, for a third phoneme; etc.), subsets can be used to map a numerical input to a multi-actuator output. In an example, to make the impression of “sweeps” (e.g., turning actuators on and off in quick succession), one could analyze a frame of music and track the strongest/loudest frequency and control the actuators to produce upward/downward “sweeps” as a function of whether the frequency increased or decreased from a previously analyzed frame.”); Lee at 6:13-17 (“In addition, when the button 39b arranged in the control unit 39 installed in the body 30 is operated, the plurality of electromagnet-by-breathers 37, the thermoelectric element 38, and the far-infrared ray lamp 40, which are provided between the outer skin and the inner skin of the body 30, are respectively or simultaneously turned on, so that the massage effect can be improved.”). Thus, a person of ordinary skill in the art would have been motivated to modify any of the primary references to include this feature. For example multiple independently operable energy generators would maximize the types of treatments and uses of a wearable device, allowing for greater flexibility and user adoption. Given that such a device could transmit multiple types of energy simultaneously or individually, a single product could replace many discrete products. A person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have understood that these references disclose

interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach limitations 1[d] (“wherein at least one of the plurality of energy generators is disposed at least partially within the flexible material layer”) and/or 14[h] (“wherein the plurality of first energy generator elements is disposed within the flexible material layer”) and claim 3 (“wherein each of the plurality of first energy generator elements includes a mechanical actuator configured to convert the electricity from the power source into a mechanical movement recognizable by the skin of the user”), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any of the prior art that discloses limitations 1[d], 14[h], and/or claim 3 in Exhibits B-01 to B-15. For example, several prior art references, including at least Deng, Cheatham, Sullivan, and Wong, disclose or teach these features. A person skilled in the art would have understood that device having energy generators disposed at least partially within the flexible material layer was well understood, and would have been motivated to incorporate these features into wearable devices. *See, e.g.*, Deng at [0012] (“Surprisingly, we have found that an economical dual modality system can be manufactured. One embodiment includes a flexible chassis including a durable energy subsystem and a replaceable thermal subsystem. The durable energy subsystem has a plurality of energy emitters disposed in an emission region of the chassis having a length and a width, wherein the emission region length and emission region width are both substantially greater than an emission region depth. The replaceable thermal subsystem has a thermal source affixed to flexible web having an adhesive surface and at least one structure arranged and configured to couple the thermal subsystem to a chassis comprising a durable energy subsystem in a

configuration wherein the thermal source is substantially superposed over the emission region of the chassis.”); Cheatham at [0076] (“FIGS. 2A and 2B are isometric cutaway views of an embodiment of the flexible compression garment 102 of the garment system shown in FIG. 1, which is worn on the at least one body part 104 of the subject 106, according to an embodiment. In the illustrated embodiment shown in FIGS. 2A and 2B, the at least one body part 104 is an arm of the subject, which includes an upper arm 104a, a forearm 104b, and an elbow joint 104c connecting the upper arm 104a and the forearm 104b together. The flexible compression garment 102 defines an exterior 120, and the one or more actuators 110 are configured as a single coiled actuator extending about a portion of the exterior 120 of the flexible compression garment 102. For example, the single coiled actuator can extend circumferentially along the exterior 120 of the flexible compression garment 102 in a substantially helical path and is positioned and configured to increase or decrease an interior space 122 (FIG. 2B) defined by an interior surface 124 (FIG. 2B) of the flexible compression garment 102 responsive to actuation thereof. However, in other embodiments, the one or more actuators 110 such as the single coiled actuator can be embedded internally within the flexible compression garment 102.”); Sullivan at [0062] (“By way of non-limiting examples, and as illustrated in FIG. 2, the therapy devices 280A-D may be attached to the cover 220 and adjustably positioned to one or more target scalp sites on the frontal, temporal, or parietal side of the head. In an example, at least one of the therapy devices 280A-D may be positioned on one or more of the base 210 or the frame element 230, or inside the control compartments 240A-B. In some examples, one or more of the therapy devices 280A-D can be distributed between the cover 220 and the control compartments 240A-B. For example, one of the therapy devices 280A-D may have an energy-conversion module residing within the control compartments 240A-B. In an example, one or more therapeutic or sensory element (such as a

thermal pad for thermal therapy, or a vibrational element for vibration or tactile therapy) may be positioned on the cover 220 to provide contact with scalp or skin.”); Wong at [0032] (“In some embodiments, the at least two electrodes are disposed on a band. In some embodiments, at least one of the at least two electrodes is disposed on a band that is attached to a housing of the therapy unit and at least one of the at least two electrodes is disposed on a skin facing side of the housing of the therapy unit.”); Berman at [0100] (“FIG. 6 illustrates an example of a flexible knee brace 112 modified to include a directed energy emitter array 28. By way of example, the knee brace 112 may be made of any material commonly used (e.g. neoprene, etc.). The directed energy emitter array 28 in the example shown includes a plurality of emitters 30 arranged in linear fashion along a plurality of circumferential bands 114. The bands 114 are distributed uniformly throughout the knee brace 112 with a spacing 116 between them. This arrangement is shown by way of example only and it should be noted that the emitters 30 may be provided on the knee brace 112 in any number, combination, and distribution pattern, up to and including a continuous matrix of emitters 30 with no significant space between them. The emitters 30 may be all one type (as shown by way of example) or a combination of different types of emitters adapted to emit different types of directed energy. Since the flexible knee brace 112 is at its core a standard knee brace, the patient gets all the benefit of wearing the knee brace as well as the benefit of therapeutic directed energy treatment, for example including but not limited to increased mitochondrial ATP production, increased stem cell production, decreased inflammation, increased blood flow, and opiate production.”); Longinotti–Buitoni at [0017] (“A wearable communication platform may include a sensor module that is in proximity with, attached to, or within the rest of the garment and may be configured (either alone, or in conjunction with another component) to generate an output, such as a haptic output or an audio and/or visual output based

on sensor input(s). The output, which may include a speaker, haptic output or the like, may be on the garment, integrated with the garment, or it may be separate from it.”); Jeon at 8:28-9:7 (“As illustrated in the drawings, since an electrode 2e, which is detachably fitted into an insertion main money 1a formed on a mask body (including a band-type mask body used for a neck band, a hair band, or an eye band draw) and elastically installed on the outside of a case 2d and 2d ' when the mask body is worn, is pressed by the face and the mask body to be energized, power is applied to a vibration motor 2g, and an eccentric cam 2f installed on a rotation shaft of the vibration motor 2g is rotated and operated to continuously hit the inner walls of the case 2d and 2d ', that is, vibration is generated to transmit the vibration force to the face, there are advantages in that portability and behavior after wearing a mask are not limited and portability is easy.”). Thus, a person of ordinary skill in the art would have been motivated to modify any of the primary references to include this feature. For example embedding the energy generators at least partially within a flexible material layer would allow for a more secure connection between the energy generator and a user’s skin. A person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have understood that these references disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach claim 2 (“wherein the plurality of energy generators includes a plurality of first energy generator elements, each of the plurality of first energy generator elements including a mechanical actuator configured to convert the electricity from the power source into a mechanical movement recognizable by the skin of the user”) and/or claim limitation 14[e] (“wherein each of the plurality of first energy generator elements includes a mechanical

actuator configured to convert the electricity from the power source into a mechanical movement recognizable by the skin of the user”), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any of the prior art that discloses claims 2 and/or 14[e] in Exhibits B-01 to B-15. For example, several prior art references, including at least Deng, Cheatham, and Sullivan disclose or teach these features. A person skilled in the art would have understood that a wearable device in which one of the plurality of energy generators included a mechanical actuator, and would have been motivated to incorporate these features into wearable devices. *See, e.g.*, Deng at [0116] (“Energy emitters 670 may comprise one or more electromagnetic radiation emitters/modalities. These include, but are not limited to, light, electromagnetic field, microcurrent, electrical stimulation (TENS transcutaneous electrical nerve stimulation, MENS, PENS), iontophoresis, sonophoresis (require additional element, topical, active, etc.). In some embodiments, energy emitters 670 may emit light in the form of visible, ultra-violet (UV), or Infra-Red (IR) light. In other embodiments, energy emitters 670 may comprise one or more physical motion emitters including without limitation ultrasound, vibration, and combinations thereof.”); Cheatham at [0075] (“In an embodiment, the one or more motors include one or more micro-electro-mechanical actuators. For example, the one or more micro-electro-mechanical motors can include one or more micro-piezoelectric actuators, one or more micro-electrostatic actuators, or one or more micro-electromagnetic actuators. Examples of suitable micro-electro-mechanical motors that can be used to practice one or more embodiments disclosed herein are disclosed in Acoust. Sci. & Tech. 31, 2 (2010), the disclosure of which is incorporated herein, in its entirety, by this reference. As another example, one suitable micro-piezoelectric actuator is New Scale's SQUIGGLE™ motor.”); Sullivan at [0026] (“Example 19 can include, or can optionally be combined with the

subject matter of Example 16 to optionally include, delivering the first and second modes of therapeutic energy respectively selected from the group consisting of: a transcutaneous electrical nerve stimulation (TENS); a transcranial direct current stimulation (tDCS); a transcranial magnetic stimulation (TMS); a thermal energy mode; an ultrasonic energy mode; a vibration or tactile massage mode; a high-frequency RF energy mode; a laser light energy mode; a visual stimulation; and an aural stimulation.”); Brav at [0007] (“The present disclosure relates generally to providing haptic feedback to users. Haptic feedback provides users with stimulation in the form of forces, vibrations, or the like.”); Longinotti–Buitoni at [0052] (“In some embodiments wherein plurality of signals comprises a body position signal, the step of delivering the haptic feedback includes delivering a vibration to the individual to encourage the individual to change a position. In some embodiments, communicating the feedback output includes providing a haptic feedback.”); Marton at Abstract (“A system applies compression, vibration and heat to a body part of a person. The system includes a portable vibration and heat generation apparatus having a flexible support platform and a bag-like enclosure extending from the support platform.”); Jeon at 2:13-19 (“The present invention relates to a cosmetic massage mask and, more specifically, to a cosmetic massage mask (Mass Age M ask) which has a vibration motor (Vibrator Motor) inside or outside a mask body...”); Eagleman at [0023] (“The stimuli can be provided by a plurality of tactile interface devices (e.g., haptic actuators, electrical stimulators, etc.) in a spatial distribution (e.g., multidimensional spatial distribution), each of which can provide a variety of available output stimuli with different stimulus parameters (e.g., as shown in FIGS. 3A-3B). The device(s) can provide haptic stimuli through the tactile interface devices, and in specific examples, can include an array of tactile interface devices operable to provide configurable haptic stimuli to a user. The tactile interface devices can include vibration motors

(e.g., eccentric rotating mass (ERM) devices), Linear Resonant Actuators (LRAs), piezoelectric devices, and/or any other suitable devices (and/or combinations thereof, such as hybrid devices incorporating both ERM and LRA elements.); Jeong at 9:25-10:2 (“FIG. 4 shows the structure of the vibration stimulator 30. The vibration stimulator 30 further includes a 'on (ON)/off (OFF) 'switch 33 for attaching the DC motor 32 having the eccentric pulley 37 fixed to the rotating shaft to the main body 31 by using the fixing claw 36 and the fixing screw 35 at the outside, receiving the DC power from the blood flow improvement device (not shown) to the connector 34 to operate upright, and allowing the user to arbitrarily select whether to operate or middle. Here, the blood flow improvement device disclosed in the above-mentioned line application specification is used.”); Kim at 2:14-20 (“The present invention relates to a front face massage device and, more specifically, to a front face massage device which can prevent and treat eye diseases such as eyesight and dry eye syndrome by efficiently stimulating the skin muscles of the eyes with a multi-functional (complex) acupuncture effect consisting of a vibration motor (vibration massage), an air tube (air pressure massage), and a heating wire (hot heat massage) around the eyes of a human body, and can improve ball sagging and remove wrinkles through ball massage through air pressure.”); Yoon at 3:25-4:1 (“The mask main body 30 is formed by embedding a heating wire 6 and a small vibration motor 8 between a pair of pads 10 and 20 coupled to each other in front and rear directions, and the pads 10 and 20 are formed with openings 2, 3, and 4 at portions corresponding to the eyes, nose, and mouth of the face. In this case, the openings 2, 3, and 4 are formed in the form of through-holes or slits so that when the mask is worn, breathing is performed through the number parts 2, 3, and 4 and a field of view is secured.”); Cho at 4:14-20 (“The motor 6 operated by the power of the rechargeable battery 7 rotates the eccentric rotation plate 5 mounted on the motor shaft while the motor shaft rotates.

The rotating eccentric rotation plate 5 applies a fine impact while vibrating the vibration piece 4 by eccentric rotation, so that a plurality of vibration plates vibrate. Therefore, since an impact is applied to the vibration piece 4 whenever the eccentric rotation plate 5 rotates once, the plurality of vibration pieces 4 vibrate while moving in all directions by the vibration phenomenon.”). Thus, a person of ordinary skill in the art would have been motivated to modify any of the primary references to include this feature. For example mechanical movement is easily recognized by the skin of a user and is recognized for certain therapeutic benefits such as massaging and relaxing muscles. A person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have understood that these references disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach claim 4 (“wherein the plurality of energy generators includes a plurality of second energy generator elements, each of the plurality of second energy generator elements including a pressure generator configured to convert the electricity from the power source into a pressure energy recognizable by the skin of the user”) and/or claim limitation 14[f], it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any of the prior art that discloses claim 4 and/or 14[f] in Exhibits B-01 to B-15. For example, several prior art references, including at least Deng, Cheatham, and Sullivan disclose or teach these features. A person skilled in the art would have understood that a wearable device in which one of the plurality of energy generators included a pressure generator was well understood, and would have been motivated to incorporate these features into wearable devices. *See, e.g.*, Deng at [0116] (“Energy emitters 670 may comprise

one or more electromagnetic radiation emitters/modalities. These include, but are not limited to, light, electromagnetic field, microcurrent, electrical stimulation (TENS trans-cutaneous electrical nerve stimulation, MENS, PENS), iontophoresis, sonophoresis (require additional element, topical, active, etc.). In some embodiments, energy emitters 670 may emit light in the form of visible, ultra-violet (UV), or Infra-Red (IR) light. In other embodiments, energy emitters 670 may comprise one or more physical motion emitters including without limitation ultrasound, vibration, and combinations thereof.”); Cheatham at [0009] (“Embodiments disclosed herein relate to a garment system including at least one muscle or at least one joint activity sensor, and at least one actuator that operates responsive to sensing feedback from the at least one muscle or the at least one joint activity sensor to cause a flexible compression garment to selectively compress against or selectively relieve compression against at least one body part of a subject. Such selective compression or relief of compression against the at least one body part can improve muscle functioning, joint functioning, or can be used for training or teaching an activity (e.g., a sport) or for rehabilitation.”); Sullivan at [0026] (““Example 19 can include, or can optionally be combined with the subject matter of Example 16 to optionally include, delivering the first and second modes of therapeutic energy respectively selected from the group consisting of: a transcutaneous electrical nerve stimulation (TENS); a transcranial direct current stimulation (tDCS); a transcranial magnetic stimulation (TMS); a thermal energy mode; an ultrasonic energy mode; a vibration or tactile massage mode; a high-frequency RF energy mode; a laser light energy mode; a visual stimulation; and an aural stimulation.”); Brav at [0085] (“In other embodiments, feedback device 100 includes a speaker (e.g., external speaker, head phones, ear buds, etc.) configured to provide audible feedback (e.g., an audible warning or notification, etc.) to a user. The speaker may be implemented in any suitable location, and any suitable number of

speakers may be utilized. In some embodiments, multiple speakers may be utilized. The speakers may be worn on or within one or both ears of a user. In one embodiment, the speakers are stereophonic such that a stereophonic warning is provided to users by way of feedback device 100. While in some embodiments the speakers are worn by a user (e.g., on an ear, etc.), in other embodiments, the speakers are carried by another piece of equipment, such as headgear 104, a vehicle, etc. The pitch, volume, tone, frequency, and other characteristics of an audible warning/notification may be varied to provide indications of direction, relative position, relative velocity, absolute velocity, relative acceleration, absolute acceleration, affiliation, threat level, nature, and the like to the user.”); Berman at [0010] (“According to another aspect, the energy emission portals comprise one or more of: (a) a plurality of light sources capable of emitting light with a wavelength of between 450 nanometers and 1500 nanometers, wherein the light sources include at least one of light emitting diodes and laser diodes; (b) a plurality of fiber optic transmission elements each having a distal end for providing luminous communication from a source of light with a wavelength of between 450 nanometers and 1500 nanometers to the respective energy emission portal, wherein the source of light includes at least one of a light emitting diode, a laser diode, a fixed frequency laser, and a variable frequency laser; (c) one or more ultrasound transducers; (d) one or more millimeter wave transducers; (e) one or more electrodes for delivering at least one of pulsed direct current (DC) and alternating current (AC); (f) one or more electromagnetic coils capable of emitting at least one of pulsed and static electromagnetic fields; and (g) combinational transducers capable of delivering any combination of types of directed energy.”); Longinotti–Buitoni at [0017] (“A wearable communication platform may include a sensor module that is in proximity with, attached to, or within the rest of the garment and may be configured (either alone, or in conjunction with another component) to

generate an output, such as a haptic output or an audio and/or visual output based on sensor input(s). The output, which may include a speaker, haptic output or the like, may be on the garment, integrated with the garment, or it may be separate from it.”); Marton at [0004] (“One aspect of the embodiments disclosed herein is a system that applies compression, vibration and heat to a body part of a person. The system includes a portable vibration and heat generation apparatus having a flexible support platform and a bag-like enclosure extending from the support platform. A cylindrical control unit is mounted to the support platform and extends perpendicularly from the support platform. The control unit has a diameter of between 50 millimeters and 100 millimeters. The control unit houses electronic circuitry and at least one battery. Four vibration pods extend from the support platform into the bag-like structure. The bag-like structure also houses a heat generation unit. The control unit extends through a circular bore in a compression wrap. The compression wrap is securable to a body part with a distal wall of the bag-like enclosure against the body part. The system selectively applies vibration, heat or a combination of vibration and heat to the body part.”); Eagleman at [0024] (“The device(s) can additionally or alternatively be operable to provide one or more of: auditory stimuli, electrical stimuli (e.g., peripheral stimuli, etc.), olfactory stimuli, taste stimuli, and any other suitable form of stimulus.”); Jeong at 2:12-15 (“Claim 6. The multi-functional pneumatic band of claim 1, wherein the multi-functional pneumatic vent comprises a manual or automatic air compressor for generating and supplying compressed air.”); Kim at 2:14-20 (“The present invention relates to a front face massage device and, more specifically, to a front face massage device which can prevent and treat eye diseases such as eyesight and dry eye syndrome by efficiently stimulating the skin muscles of the eyes with a multi-functional (complex) acupressure effect consisting of a vibration motor (vibration massage), an air tube (air pressure massage), and a heating wire (hot

heat massage) around the eyes of a human body, and can improve ball sagging and remove wrinkles through ball massage through air pressure.”). Thus, a person of ordinary skill in the art would have been motivated to modify any of the primary references to include this feature. For example pressure, such as that produced by sound waves or by compression is easily recognized by the skin of a user and is recognized for certain therapeutic benefits such as relieving stress muscles and assisting in recovery. A person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have understood that these references disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach claim 5 (“wherein the body defines a length having a longitudinal axis and a width having a lateral axis, wherein the longitudinal axis and the lateral axis divide the body into a first section located above the longitudinal axis and on a first side of the lateral axis, a second section located above the longitudinal axis and on a second side of the lateral axis opposite the first side of the lateral axis, a third section located below the longitudinal axis and on the first side of the lateral axis, and a fourth section located below the longitudinal axis and on the second side of the lateral axis, and wherein the first section and the second section include at least a pair of first energy generator elements of the plurality of first energy generator elements and at least a pair of second energy generator elements of the plurality of second energy generator elements”) claim 6 (“wherein the third section and the fourth section include at least another first energy generator element of the plurality of first energy generator elements and at least another second energy generator element of the plurality of second energy generator elements”), and/or claim 8 (“wherein the body defines a length having a longitudinal axis and a width having a

lateral axis, wherein the longitudinal axis and the lateral axis divide the body into a first section located above the longitudinal axis and on a first side of the lateral axis, a second section located above the longitudinal axis and on a second side of the lateral axis opposite the first side of the lateral axis, a third section located below the longitudinal axis and on the first side of the lateral axis, and a fourth section located below the longitudinal axis and on the second side of the lateral axis, and wherein each the third section and the fourth section include another third energy generator element of the plurality of third energy generator elements”), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any of the prior art that discloses claims 5 and/or 6 in Exhibits B-01 to B-15. For example, several prior art references, including at least Deng, Cheatham, and Sullivan disclose or teach these features. A person skilled in the art would have understood that a wearable device having particular arrangements of energy generators, including those described in claims 5 and 6 was well understood, and would have been motivated to incorporate these features into wearable devices. *See, e.g.*, Cheatham at Figure 10B; Deng at Figure 12; Sullivan at Figure 2; Brav at Fig. 3A; Berman at Fig. 4; Jeon at Fig. 2; Lee at Fig. 3; Kim at Fig. 3; Yoon at Figure 2. Thus, a person of ordinary skill in the art would have been motivated to modify any of the primary references to include this feature. For example particular arrangements of energy generators would fit certain scenarios or body parts more effectively. A person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have understood that these references disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach claim 7 (“wherein the plurality of energy generators includes a plurality of third energy generator elements, the plurality of third energy generator elements including a heat generator configured to convert the electricity from the power source into a heat flux recognizable by the skin of the user”) and/or claim element 14[g] (“wherein each of the plurality of third energy generator elements includes a heat generator configured to convert the electricity from the power source into a heat flux recognizable by the skin of the user”), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any of the prior art that discloses claims 7 and/or 14[g] in Exhibits B-01 to B-15. For example, several prior art references, including at least Deng, Cheatham, and Sullivan disclose or teach these features. A person skilled in the art would have understood that a wearable device in which one of the plurality of energy generators included a heat generator outputting a heat flux was well understood, and would have been motivated to incorporate these features into wearable devices. *See, e.g.*, Deng at [0172] (“The devices described herein deliver phototherapy and thermal therapy, allowing for relief from musculoskeletal pain and other ailments (including injury to bones, joints, muscles, tendons, ligaments, or nerves).”); Cheatham [0138] (“In an embodiment, the at least one TSDD 910 can include at least one thermal device positioned and equipped to deliver thermal stimulation (e.g., heat or cooling such as via infrared radiation, etc.) to the at least one body part. For example, the at least one thermal device can include one or more thermal devices (e.g., infrared light source or acoustic transducers) positioned and configured to stimulate a tissue in the at least one body part. For example, the at least one thermal device can include one or more thermal devices positioned and configured to block one or more nerve signals (e.g., pain signals) in the at least one body part, stimulate nerves,

or heat one or more tissues, such as via emitting heat (e.g., infrared radiation).”); Sullivan at [0013] (“Example 6 can include, or can optionally be combined with the subject matter of one or any combination of Examples 1 through 5 to include, the first and second therapy devices that can be respectively selected from the group consisting of: a first neuromodulator configured to deliver transcutaneous electrical nerve stimulation (TENS); a second neuromodulator configured to deliver transcranial direct current stimulation (tDCS); a third neuromodulator configured to deliver transcranial magnetic stimulation (TMS); a thermal energy transducer configured to generate thermal energy; an ultrasound transducer configured to generate ultrasonic energy; a vibrotactile transducer configured to generate vibration or tactile massage; a radio-frequency (RF) transducer configured to generate high-frequency RF energy; a laser device configured to generate laser light energy; a visual stimulator configured to generate or prevent visual stimulation; and an aural stimulator configured to generate aural stimulation.”); Brav at [0095] (“The feedback provided by elements 102 may include, but are not limited to, a vibration, a stroke or swipe, an acoustic stimulation, a visual stimulation, a temperature change, a moisture change, a lubrication, and/or an electrical stimulation. . . . The temperature change may be provided by a heating/cooling element (e.g., a resistive heating element, a heating element that utilizes a chemical reaction, a fan, etc.). The moisture or lubrication may be provided by a nozzle attached to a fluid reservoir (e.g., a water tank, etc.) or a humidifying material or device. The electrical stimulation may be provided by a device configured to provide electrical impulses (e.g., electrical muscle stimulation, etc.)”); Longinotti–Buitoni at [0126] (“In some embodiments, a garment may include on-demand heating and treatment capability 27 that may be able to respond to a preprogrammed element, voice activation, sensors, thermostat, and may be directly placed on a specific location on the body or all around the intelligent wear.”); Marton at [0038] (“A vibration

and heat generation apparatus 100 is illustrated in FIGS. 1-18. As described below, the vibration and heat generation apparatus can be applied to different locations of body. The apparatus can apply vibration to a selected location of the body, can apply heat to the selected location of the body, and can apply a combination of vibration to the selected location of the body. The apparatus is particularly adapted to be used with compression wraps, which are also described below.”); Jeon at 1:11-21 (“Claim 1. A beauty massage mask comprising: a plurality of vibration motors (2), a plurality of carbons (3), and a control box (5) having a heating wire (4) arranged on an inner front surface thereof and extending in a front line at one side thereof; a power supply unit (51) configured to supply power; a function selection switch unit (52) configured to select each function; a function display unit (53, 54) configured to display the selected function; and an ion control unit (55) configured to control an ion emission amount of the selected function by the carbons (3), wherein the function selection switch unit (52) is composed of an entire function selection switch (SW1), a heating unit switch (SW2), a vibration generation unit switch (SW3), and an ion switch (SW4), and the function selection switch unit (52) is composed of a circular unit (58) capable of evenly emitting ions of the carbons (3).”); Jeong at 9:14-24 (“The heat insulating band 20 of FIG. 3D maintains an appropriate temperature by heating the heating wire 21 through the DC power supplied to the power connector 23 according to the temperature set in the external blood flow improvement device (not shown). Here, carbon fiber is attached to one surface, and when the other surface is in contact with the human body, the heat-resistant ore pad 22 coated with jade, precious metal, or ore powder having a physiologically active effect is covered so that far infrared rays and composite spectral rays beneficial to the human body are injected into the human body according to an increase in temperature. The heat-retaining band 20 configured as described above is first disposed under the pneumatic band before the pneumatic

band is installed in the human body when necessary, and is provided to discharge light rays beneficial to the human body through proper on-help with pressure.”); Lee at 2:6-9 (“The present invention relates to a massage mask and, more specifically, relates to a massage mask capable of easily massaging a face by using a plurality of electromagnet bib radiators (Vib radiators), a thermoelectric element, a far infrared ray lamp, a massage cream, etc.”); Kim at 2:14-20 (“The present invention relates to a front face massage device and, more specifically, to a front face massage device which can prevent and treat eye diseases such as eyesight and dry eye syndrome by efficiently stimulating the skin muscles of the eyes with a multi-functional (complex) acupressure effect consisting of a vibration motor (vibration massage), an air tube (air pressure massage), and a heating wire (hot heat massage) around the eyes of a human body, and can improve ball sagging and remove wrinkles through ball massage through air pressure.”); Yoon at 3:7-13 (“According to the present invention, the massage mask comprises: a pair of pads (10, 20) coupled to be folded back and forth; a heating wire (6) and a vibration motor (8) embedded between the pads (10, 20); and an opening part (2, 3, 4) formed on a part corresponding to eyes, nose, and mouth of a face. The pads (10, 20) are made of silicon, and a coupling groove (14) and a coupling protrusion (24) are formed on a surface in contact with each other along the circumference of the pads (10, 20) and the circumference of the opening parts (2, 3, 4).”). Thus, a person of ordinary skill in the art would have been motivated to modify any of the primary references to include this feature. For example heat is easily recognized by the skin of a user and is known for providing certain therapeutic benefits such as relieving stress muscles, soothing muscle soreness, and assisting in recovery. A person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have

understood that these references disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach claim 10 (“wherein each of the plurality of energy generators is spaced apart from one another when viewed from the skin facing surface of the body”), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any of the prior art that claim 10 in Exhibits B-01 to B-15. For example, several prior art references, including at least Brav, Deng, Cheatham, Berman, Jeon, Eagleman, and Lee disclose or teach these features. A person skilled in the art would have understood that a wearable device having energy generators spaced apart from one another when viewed from the skin facing surface of the body was well understood, and would have been motivated to incorporate these features into wearable devices. *See, e.g.*, Cheatham at Figure 10B; Deng at Figure 12; Sullivan at Figure 2; Brav at Fig. 3A; Berman at Fig. 4; Jeon at Fig. 2; Lee at Fig. 3; Kim at Fig. 3; Yoon at Figure 2. Thus, a person of ordinary skill in the art would have been motivated to modify any of the primary references to include this feature. For example by spacing energy generators the wearable device would cover the entire area of skin to be treated more effectively and not concentrate energy transmission at a particular location. A person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have understood that these references disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

As another example, to the extent that any primary reference is deemed not to anticipate a claim for failing to teach limitation 14[d] (“wherein the plurality of energy generators includes

a plurality of first energy generator elements, a plurality of second energy generator elements, and a plurality of third energy generator elements”), it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the primary reference with any of the prior art that discloses limitation 14[d] in Exhibits B-01 to B-15. For example, several prior art references, including at least Deng, Cheatham, and Sullivan disclose or teach these features. A person skilled in the art would have understood that a wearable device having three types of energy generators was well understood, and would have been motivated to incorporate these features into wearable devices. *See, e.g.*, Deng at [0116] (“Energy emitters 670 may comprise one or more electromagnetic radiation emitters/modalities. These include, but are not limited to, light, electromagnetic field, microcurrent, electrical stimulation (TENS trans-cutaneous electrical nerve stimulation, MENS, PENS), iontophoresis, sonophoresis (require additional element, topical, active, etc.). In some embodiments, energy emitters 670 may emit light in the form of visible, ultra-violet (UV), or Infra-Red (IR) light. In other embodiments, energy emitters 670 may comprise one or more physical motion emitters including without limitation ultrasound, vibration, and combinations thereof.”); Cheatham at [0138] (“In an embodiment, the at least one TSDD 910 can include at least one thermal device positioned and equipped to deliver thermal stimulation (e.g., heat or cooling such as via infrared radiation, etc.) to the at least one body part. For example, the at least one thermal device can include one or more thermal devices (e.g., infrared light source or acoustic transducers) positioned and configured to stimulate a tissue in the at least one body part. For example, the at least one thermal device can include one or more thermal devices positioned and configured to block one or more nerve signals (e.g., pain signals) in the at least one body part, stimulate nerves, or heat one or more tissues, such as via emitting heat (e.g., infrared radiation).”); Sullivan at [0062] (““The therapeutic cap 200 can include the

therapy devices 280A-D that may provide various modalities of therapy to induce a state of relaxation or relief in the patient such as to achieve therapeutic effect of pain relief. Examples of the therapy devices 280A-D can include a third neuromodulator configured to deliver transcranial magnetic stimulation (TMS), a thermal energy transducer configured to generate thermal energy, an ultrasound transducer configured to generate ultrasonic energy, a vibrotactile transducer configured to generate vibration or tactile massage, a radio-frequency (RF) transducer configured to generate high-frequency RF energy, a laser device configured to generate laser light energy, a visual stimulator configured to generate or prevent visual stimulation, or an aural stimulator configured to generate aural stimulation, among others. Such therapies as provided by the therapy devices 280A-D can be used in addition to or in lieu of the electrostimulation, such as TENS or tDCS provided by the therapy devices 250, 260, or 270. By way of non-limiting examples, and as illustrated in FIG. 2, the therapy devices 280A-D may be attached to the cover 220 and adjustably positioned to one or more target scalp sites on the frontal, temporal, or parietal side of the head. In an example, at least one of the therapy devices 280A-D may be positioned on one or more of the base 210 or the frame element 230, or inside the control compartments 240A-B. In some examples, one or more of the therapy devices 280A-D can be distributed between the cover 220 and the control compartments 240A-B. For example, one of the therapy devices 280A-D may have an energy-conversion module residing within the control compartments 240A-B. In an example, one or more therapeutic or sensory element (such as a thermal pad for thermal therapy, or a vibrational element for vibration or tactile therapy) may be positioned on the cover 220 to provide contact with scalp or skin. The control compartments 240A-B can include one or more power supplies that respectively provide power to the therapy devices 280A-D. In an example, the power supplies may include one or more rechargeable batteries.”); Brav at [0074]

(“According to an example embodiment, elements 102 may be or include a vibratory element configured to provide haptic feedback (e.g., vibrations, mechanical stimulations, etc.) to a user regarding a secondary object or event. For example, element 102 in some embodiments is or includes a vibration device or similar component. In another embodiment, elements 102 of feedback device 100 include an audible element configured to provide audible feedback to a user regarding a secondary object or event. For example, in some embodiments, element 102 is or includes a speaker or similar component. In further embodiments, elements 102 of feedback device 100 include a visual element configured to provide visual feedback to a user regarding a secondary object or event. For example, in some embodiments, element 102 is or includes a light source (e.g., an LED, etc.). In yet further embodiments, feedback device 100 includes a combination of feedback elements, including one or more of haptic, audible, visual, and the like.”); Longinotti–Buitoni at [0017] (“A wearable communication platform may include a sensor module that is in proximity with, attached to, or within the rest of the garment and may be configured (either alone, or in conjunction with another component) to generate an output, such as a haptic output or an audio and/or visual output based on sensor input(s). The output, which may include a speaker, haptic output or the like, may be on the garment, integrated with the garment, or it may be separate from it.”); Kim at 2:14-20 (“The present invention relates to a front face massage device and, more specifically, to a front face massage device which can prevent and treat eye diseases such as eyesight and dry eye syndrome by efficiently stimulating the skin muscles of the eyes with a multi-functional (complex) acupressure effect consisting of a vibration motor (vibration massage), an air tube (air pressure massage), and a heating wire (hot heat massage) around the eyes of a human body, and can improve ball sagging and remove wrinkles through ball massage through air pressure.”). Thus, a person of ordinary skill in the art

would have been motivated to modify any of the primary references to include this feature. For example multiple types of energy generators would maximize the types of treatments and uses of a wearable device, allowing for greater flexibility and user adoption. A person of ordinary skill in the art would also have had a reasonable expectation of success. A person of ordinary skill in the art would have understood that these references disclose interrelated teachings based on routine technologies and would have been amenable to various well-understood and predictable combinations.

V. Invalidity Contentions Under 35 U.S.C. § 112

Defendant include below the grounds on which Defendant contends the asserted claims are invalid for failure to meet the requirements of the first two paragraphs of 35 U.S.C. § 112(a) and (b).

Plaintiff has not yet provided a claim construction for many of the terms and phrases that Defendant anticipates will be in dispute. Defendant, therefore, cannot provide a complete list of its § 112 defenses because Defendant does not know whether Plaintiff will proffer a construction for certain terms and phrases that is broader than, or inconsistent with, the construction that would be supportable by the disclosure set forth in the specification.

To the extent the following contentions reflect constructions of claim limitations consistent with or implicit in Plaintiff's Infringement Contentions, no inference is intended nor should any be drawn that Defendant agrees with Plaintiff's claim constructions, and Defendant expressly reserves the right to contest such claim constructions. Defendant offers these contentions in response to Plaintiff's Infringement Contentions and without prejudice to any position it may ultimately take as to any claim construction issues.

Accordingly, Defendant reserves the right to amend or supplement these § 112 Invalidity Contentions as discovery progresses.

A. Indefiniteness Under 35 U.S.C. § 112(b)

35 U.S.C. § 112(a) requires that a patent claim “particularly point[] out and distinctly claim[] the subject matter which the inventor ... regards as his invention.” 35 U.S.C. § 112(b). Claim terms that fail to inform those skilled in the art “with reasonable certainty ... about the scope of the invention” fail the definiteness requirement of 35 U.S.C. § 112. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014).

Each of the asserted claims are invalid as indefinite under 35 U.S.C. § 112 because they fail to particularly point out and distinctly claim the subject matter which the applicant regards as his invention. In particular, the following limitations, read in light of the intrinsic evidence, fail to inform those skilled in the art with reasonable certainty about the scope of the claimed inventions:

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- Claim 1: “a plurality of energy generator elements being independently operable to convert electricity from the power source into a plurality of different energy types transmittable towards an area of skin of a user”
- Claim 1: “wherein the body includes a grip arranged to be grasped by a hand of the user applying a gripping force to maintain the plurality of energy generator elements on or adjacent the area of skin”
- Claim 1: “the plurality of energy generator elements being arranged coaxially about and axis”
- Claim 1: “an impact generator element having a tissue contact surface that is linearly actuatable along the axis”
- Claim 1: “cause corresponding physical movement of the area of skin.”

- Claim 2: “to move the piston and the tissue contact surface along the axis”
- Claim 3: “wherein the second energy generator element is substantially ring shaped”
- Claim 4: “the reflecting groove defining a concave shape arranged to reflect energy generated from the second energy generator element towards the area of skin”
- Claim 7: “wherein at least one of the plurality of energy generator elements is contained at least partially within a housing that is removably securable to the body”
- Claim 8: “a processing unit configured to receive input data and generate a control signal based on the input data”
- Claim 8: “the body further including a skin contacting surface maintainable against skin of a user by a force applied by a hand of the user when gripping the body”
- Claim 8: “the first and second energy generator elements being independently operable to convert electricity from the power source into a first energy type and a second energy type, respectively, and direct the first and second energy types toward an area of skin”
- Claim 8: “the first energy generator element including an impact generator element having a tissue contact surface that is linearly actuatable along an axis to contact and cause corresponding physical movement of the area of skin”
- Claim 8: “wherein the sensor is configured to detect additional input data based on a vital sign of the user and transmit the input data for display”
- Claim 10: “a controller configured to modify intensity of the first energy type and the second energy type”
- Claim 15: “a third energy generator element independently operable of the first and second energy generator elements”

- Claim 17: “the body including a skin contacting surface maintainable against skin of a user by a force applied by a hand of the user when gripping the body”
- Claim 17: “the first and second energy generator elements being independently operable to convert electricity from the power source into a first energy type and a second energy type, respectively”
- Claim 17: “the first energy generator element including an impact generator element having a tissue contact surface that is linearly actuatable along an axis to contact and cause corresponding physical movement of the area of skin”
- Claim 17: “operable to output an optical signal on a display that is observable by eyes of the user”

'161 Patent

- Claim 1: “a body including a flexible material layer such that the body is conformable about a head of a user”
- Claim 1: “an attachment element including a band to maintain the body about the head of the user and a skin facing surface of the body against skin of the user”
- Claim 1: “a plurality of energy generators being independently operable to convert electricity from the power source into a plurality of different energy types transmittable towards the skin of the user”
- Claim 1: “wherein at least one of the plurality of energy generators is disposed at least partially within the flexible material layer”
- Claims 2 and 14: “a mechanical movement recognizable by the skin of the user”
- Claim 3: “the plurality of first energy generator elements is disposed at least partially within the flexible material layer”

- Claims 4 and 14: “a pressure energy recognizable by the skin of the user”
- Claims 5 and 7: “the body defines a length having a longitudinal axis and a width having a lateral axis”
- Claims 7 and 14: “a heat flux recognizable by the skin of the user”
- Claim 10: “each of the plurality of energy generators is spaced apart from one another when viewed from the skin facing surface of the body”
- Claim 14: “a body including a flexible material layer conformable about a head of a user”
- Claim 14: “an attachment element including a headband to maintain a skin facing surface of the body against skin of the user”
- Claim 14: “a plurality of energy generators being independently operable to convert electricity from the power source into a plurality of different energy types transmittable towards the skin of the user”
- Claim 14: “the plurality of first energy generator elements is disposed within the flexible material layer”

B. Lack of Enablement/Lack of Written Description Under 35 U.S.C. § 112(a)

The asserted claims of the Patents-In-Suit are further invalid under 35 U.S.C. § 112(a) because the specifications do not contain an adequate written description of the subject matter of these claims and would not enable one of skill in the relevant art to make and use the alleged invention.

For a claim to be valid, the specification must contain “a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same.” 35 U.S.C. § 112(a). To fulfill the written

description requirement, it “must clearly allow persons of ordinary skill in the art to recognize that the inventor invented what is claimed.” *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (citation and internal quotation marks omitted). “[T]he applicant must ‘convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention,’ and demonstrate that by disclosure in the specification of the patent.” *Carnegie Mellon Univ. v. Hoffmann-La Roche Inc.*, 541 F.3d 1115, 1122 (Fed. Cir. 2008) (quoting *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563–64 (Fed. Cir. 1991)).

The specification must also describe “the manner and process of making and using [the invention], in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains ... to make and use the” invention. *Ariad*, 598 F.3d at 1343; *see also* 35 U.S.C. § 112(a). “The enablement requirement is satisfied when one skilled in the art, after reading the specification, could practice the claimed invention without undue experimentation.” *AK Steel Corp. v. Sollac & Ugine*, 344 F.3d 1234, 1244 (Fed. Cir. 2003) (citation omitted). “[T]he scope of the claims must be less than or equal to the scope of the enablement.” *Nat’l Recovery Tech., Inc. v. Magnetic Separation Sys., Inc.*, 166 F.3d 1190, 1196 (Fed. Cir. 1999).

Each of the asserted claims below are invalid because the specifications fail to provide written description and/or an enabling disclosure of at least the following limitations:

’174 Patent⁵

All the Asserted Claims recite a “treatment device” that includes “energy generator elements.” ’174 Patent Cls. 1, 8, 17. Hyperice is asserting these claims to cover therapeutic devices with alleged “energy generator elements” that are said to provide treatment functionality only and no communication functionality. However, the specification does not disclose any

⁵ Defendants further incorporate the ’174 PGR Petition and accompanying exhibits.

embodiment, example, or description of using energy generator elements in a treatment device for only providing treatment functionality. Instead, it exclusively discloses using them for a communication device providing communication functionality. Thus, the specification fails to demonstrate possession of the claimed invention of a treatment device with energy generator elements that only provide treatment functionality and no communication functionality. It discloses only communication devices—these devices use energy generator elements to communicate information, such as biometric data, location data, or commands, to the user’s skin. ’174 Patent at 1:59-2:61. The specification does not disclose any treatment device that uses energy generator elements to output energy for treatment of a condition, such as a disease, a disorder, or an injury. *Id.* Indeed, the specification nowhere suggests what types of treatments energy generator elements could perform, what types of energy could be output, what types of conditions could be treated, or what advantages or benefits could be achieved. *Id.* The specification does not disclose any criteria or methods for selecting or controlling, the output energy for treatment purposes. *Id.* The absence of such disclosure in the specification would not reasonably convey to a POSITA that the inventor had possession of the claimed invention of a treatment device with energy generator elements. *Id.*

Beyond lacking written description, the specification does not provide sufficient guidance and direction on how to utilize energy generator elements as part of a treatment device and thus is not enabled under § 112(a). Indeed, the only portion of the specification that alludes to treatment related to energy generators simply states in a single sentence: “Alternatively, all or portion of the energies 32 may be output toward the bone-facing surface of element 770 to communicate signals and/or apply treatments to the bone.” ’174 Patent at 30:3-5. The specification does not disclose any details or examples of how such outputting of energies for

treatments to the bone would be achieved, what types of energies would be suitable for bone treatment, what types of input data and control signals would be used, what types of bone conditions or diseases would be targeted, or what types of attachment elements would be compatible with such outputting of energies. The specification does not provide any working examples, experimental data, or comparative analysis to support the feasibility and operability of such outputting of energies. Nor does the specification cite any prior art references or teachings that would enable a POSITA to fill in the gaps and omissions in the disclosure. Thus, the specification does not provide any objective criteria or parameters to guide a POSITA in practicing the full scope of the claimed treatment device without undue experimentation.

In addition, the patent is invalid for lack of enablement and/or lack of written description for the following claim limitations:

- Claims 1, 8, and 17: “A treatment device”
- Claim 1: “a plurality of energy generator elements being independently operable to convert electricity from the power source into a plurality of different energy types transmittable towards an area of skin of a user”
- Claim 1: “the plurality of energy generator elements being arranged coaxially about an axis”
- Claim 1: “wherein the body includes a grip arranged to be grasped by a hand of the user applying a gripping force to maintain the plurality of energy generator elements on or adjacent the area of skin”
- Claim 7: “wherein at least one of the plurality of energy generator elements is contained at least partially within a housing that is removably securable to the body”

- Claim 8: “the body further including a skin contacting surface maintainable against skin of a user by a force applied by a hand of the user when gripping the body”
- Claim 8: “the first and second energy generator elements being independently operable to convert electricity from the power source into a first energy type and a second energy type, respectively, and direct the first and second energy types toward an area of skin”
- Claim 15: “a third energy generator element independently operable of the first and second energy generator elements”
- Claim 17: “the body including a skin contacting surface maintainable against skin of a user by a force applied by a hand of the user when gripping the body”
- Claim 17: “the first and second energy generator elements being independently operable to convert electricity from the power source into a first energy type and a second energy type, respectively”
- Claim 17: “operable to output an optical signal on a display that is observable by eyes of the user”

'161 Patent

All the Asserted Claims recite a “wearable device” that includes “a plurality of energy generators.” ’161 Patent Cls. 1, 14. Hyperice is asserting these claims to cover therapeutic devices with alleged “energy generator elements” that provide no functionality. However, the specification does not disclose any embodiment, example, or description of using energy generator elements in a treatment device for only providing treatment functionality. Instead, it exclusively discloses using them for a communication device providing communication functionality. Thus, the specification fails to demonstrate possession of the claimed invention of a wearable device with energy generator elements that only provide treatment functionality and

no communication functionality. It discloses only communication devices—these devices use energy generator elements to communicate information, such as biometric data, location data, or commands, to the user’s skin. ’161 Patent at 1:59-2:61. The specification does not disclose any treatment device that uses energy generator elements to output energy for treatment of a condition, such as a disease, a disorder, or an injury. *Id.* Indeed, the specification nowhere suggests what types of treatments energy generator elements could perform, what types of energy could be output, what types of conditions could be treated, or what advantages or benefits could be achieved. *Id.* The specification does not disclose any criteria or methods for selecting or controlling, the output energy for treatment purposes. *Id.* The absence of such disclosure in the specification would not reasonably convey to a POSITA that the inventor had possession of the claimed invention of a treatment device with energy generator elements. *Id.*

Beyond lacking written description, the specification does not provide sufficient guidance and direction on how to utilize energy generator elements as part of a therapeutic device and thus is not enabled under § 112(a). The specification does not disclose any details or examples of how such outputting of energies for treatments to the bone would be achieved, what types of energies would be suitable for bone treatment, what types of input data and control signals would be used, what types of bone conditions or diseases would be targeted, or what types of attachment elements would be compatible with such outputting of energies. The specification does not provide any working examples, experimental data, or comparative analysis to support the feasibility and operability of such outputting of energies. Nor does the specification cite any prior art references or teachings that would enable a POSITA to fill in the gaps and omissions in the disclosure. Thus, the specification does not provide any objective criteria or parameters to guide

a POSITA in practicing the full scope of the claimed treatment device without undue experimentation.

In addition, the patent is invalid for lack of enablement and/or lack of written description for the following claim limitations:

- Claim 1: “a body including a flexible material layer such that the body is conformable about a head of a user”
- Claim 1: “a plurality of energy generators being independently operable to convert electricity from the power source into a plurality of different energy types transmittable towards the skin of the user”
- Claim 1: “wherein at least one of the plurality of energy generators is disposed at least partially within the flexible material layer”
- Claims 2 and 14: “a mechanical movement recognizable by the skin of the user”
- Claim 3: “the plurality of first energy generator elements is disposed at least partially within the flexible material layer”
- Claims 4 and 14: “a pressure energy recognizable by the skin of the user”
- Claims 7 and 14: “a heat flux recognizable by the skin of the user”
- Claim 14: “a body including a flexible material layer conformable about a head of a user”
- Claim 14: “a plurality of energy generators being independently operable to convert electricity from the power source into a plurality of different energy types transmittable towards the skin of the user”
- Claim 14: “the plurality of first energy generator elements is disposed within the flexible material layer”

C. Lack of Inventorship Under 35 U.S.C. § 112(b) and/or 35 U.S.C. § 101

The asserted claims of the Patents-In-Suit are further invalid under 35 U.S.C. § 112(b) and/or 35 U.S.C. § 101 for lack of inventorship because the invention described in the specification is exclusively directed towards communication devise while the claims are directed to a separate invention of utilizing energy generators in non-communication capacities, such as providing treatment in a treatment device or wearable device. Accordingly, the invention claimed was not invented by Matthew Robert Leaper.

VI. Document Production

Pursuant to Patent Rule 3-4, Defendants are concurrently producing the prior art identified in these Invalidity Contentions, but Defendants are not required to produce the prior art in the file history of the Asserted Patents.

In addition, based on its investigations to date, and to the extent not already produced, Defendants will produce documentation sufficient to show the operation of any aspects or elements of the Accused Instrumentalities identified by Plaintiff in its P. R. 3-1(c) chart.

Defendants reserve the right to supplement these productions with additional documentation, in accordance with the Federal Rules of Civil Procedure, the Local Rules, the Court's orders and other applicable rules and statutes.

Dated: March 7, 2025

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CERTIFICATE OF SERVICE

Pursuant to the Federal Rules of Civil Procedure, I hereby certify that, on March 7, 2025, all counsel of record who have appeared in this case are being served with a copy of the foregoing via the electronic mail.

/s/ Kristin Godfrey _____

Kristin Godfrey

Case Manager

O'Melveny & Myers LLP