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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FITBIT, INC.,

Petitioner,

v.

ALIPHCOM, INC. D/B/A JAWBONE,

Patent Owner.

Case IPR2016-00607
Patent No. 8,529,811

PETITIONER'S REPLY

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<i>Vitronics Corp. v. Conceptronic, Inc.</i> , 90 F.3d 1576 (Fed. Cir. 1996)	13

LIST OF EXHIBITS

Exhibit No.	Description	Previously Submitted
1001	U.S. Patent No. 8,529,811 to Drysdale et al.	X
1002	Declaration of Dr. Darran R. Cairns	X
1003	U.S. Patent Application Pub. No. 2006/0264756 to Lo et al.	X
1004	U.S. Patent Application Pub. No. 2009/0047797 to Anderson et al.	X
1005	U.S. Patent Application Pub. No. 2009/0295596 to Downey et al.	X
1006	Jiri G. Drobny, <i>Handbook of Thermoplastic Elastomers</i> (1st ed. 2007)	X
1007	U.S. Patent Application Pub. No. 2006/0110537 to Huang et al.	X
1008	U.S. Patent Application Pub. No. 2010/0178834 to Toyoda et al.	X
1009	U.S. Patent No. 5,286,330 to Azuma et al.	X
1010	U.S. Patent No. 5,844,523 to Brennan et al.	X
1011	U.S. Patent No. 6,361,870 to Steffl et al.	X
1012	U.S. Patent No. 6,447,886 to Mohamed et al.	X
1013	Eric L. Bruner, Edward Hughes, <i>Surfaces Matter</i> , 1209 Mater. Res. Symp. Proc. (2010)	X
1014	Marketing Materials, SRI International, <i>Anti-Smudge, Easy-to-Clean Product Coatings</i> (2010)	X
1015	Marketing Materials, Henkel Corporation, <i>Electronic Solutions</i> (2005)	X
1016	Prosecution history of U.S. Application No. 13/135,728	X
1017	Prosecution history of U.S. Application No. 13/158,372	X
1018	Prosecution history of U.S. Application No. 13/158,416	X
1019	Prosecution history of U.S. Application No. 13/427,839	X
1020	<i>Certain Activity Tracking Devices, Systems, and Components Thereof</i> , ITC Inv. 337-TA-963, Complainant AliphCom's Rebuttal Claim Construction Brief	X
1021	<i>Certain Activity Tracking Devices, Systems, and Components Thereof</i> , ITC Inv. 337-TA-963, Respondents Fitbit, Inc., Flextronics Int'l Ltd., and Flextronics Sales and Marketing (A-P) Ltd.'s Responsive Claim	X

Exhibit No.	Description	Previously Submitted
	Construction Brief	
1022	CV of Dr. Darran R. Cairns	X
1023	Charles A. Harper, <i>Handbook of Plastics, Elastomers, and Composites</i> (3rd ed. 1996)	X
1024	Reserved	X
1025	Geoffrey Holden, Hans R. Kricheldorf & Roderic P. Quirk, <i>Thermoplastic Elastomers</i> (3rd ed. 2004)	X
1026	Marketing Materials, DuPont Engineering Polymers, <i>Electrical/Electronic Thermoplastic Encapsulation</i> (1997)	X
1027	Marketing Materials, Dow Corning, <i>Information About Dow Corning Brand[®] Conformal Coatings</i> (2008)	X
1028	Declaration of Michael C. Hendershot	X
1029	Deposition transcript of Dr. Darrin G. Young	

I. Introduction

Petitioner Fitbit, Inc. (Fitbit) replies to the Patent Owner’s Response (Paper No. 21, Response) filed by AliphCom, Inc. d/b/a Jawbone (Patent Owner) and the Board’s decision to institute *inter partes* review (Paper No. 14, Institution Decision) of U.S. Patent No. 8,529,811 (the ’811 patent). Patent Owner confines its Response to a single limitation of the asserted claims. Moreover, Patent Owner’s Response relies on an unreasonable claim construction that reads out the word “substantially” from that limitation, contradicts the express language of the specification, and is inconsistent with the dependent claims. Patent Owner’s arguments should be rejected and claims 16–26 found unpatentable.

II. The Board’s preliminary construction of “covers all or substantially all” is correct

Consistent with Patent Owner’s position in a concurrent ITC investigation, Petitioner applied the phrase “covers all or substantially all” recited in claim 16 of the ’811 patent according to its ordinary meaning. See Petition at 18. The Board recognized the parties had used differing interpretations of the phrase in applying it to the prior art. Institution Decision at 7–8. The Board adopted a preliminary construction of the term as encompassing “on top of”—which was consistent with Petitioner’s understanding—and encouraged additional briefing on the phrase during trial. *Id.* at 8–9. The Board’s effective construction of this phrase is correct and need not be modified.

The broadest reasonable interpretation of the phrase “covers all or substantially all,” in light of the specification, is “partially or entirely on top of.” Thus, the phrase “forming an outer molding of the wearable device that covers all or substantially all of the one or more inner moldings” should be understood as an outer molding that is partially or entirely on top of the inner moldings. This understanding is consistent with the claim language, the specification, and the phrase’s ordinary meaning.

A. Petitioner and the Board’s preliminary construction is consistent with the claim language

Claim 16 is clear: the outer molding must cover “all *or substantially all*” of the inner moldings. Use of the disjunctive condition “or substantially all” necessitates claim scope encompassing outer moldings that cover *less* than all of the inner moldings. As recited, the outer molding may entirely cover the inner moldings, such as by enclosing or encasing them. But the claimed outer molding is not limited to covering “all” of the inner moldings. The express recitation of “or substantially all” requires an alternative: the claimed outer molding may also cover “substantially all,” or be partially on top of, the inner moldings.

B. Petitioner and the Board’s preliminary construction is consistent with the specification

Petitioner’s (and the Board’s preliminary) construction is consistent with the specification, which expressly defines “substantially” as “partially or entirely”

using the well-accepted definitional signal “i.e.,” or “it is.” See Ex. 1001 at 8:62–65.

The Federal Circuit has found that the specification’s “use of ‘i.e.’ signals an intent to define the word to which it refers.” *Toshiba Samsung Storage Tech. Korea Corp. v. LG Elecs., Inc.*, IPR2014-00204, 2014 WL 2447195, at *6 (P.T.A.B. May 28, 2014) (quoting *Edwards Lifesciences LLC v. Cook Inc.*, 582 F.3d 1322, 1334 (Fed. Cir. 2009)); see also *Abbott Labs. v. Novopharm Ltd.*, 323 F.3d 1324, 1327, 1330 (Fed. Cir. 2003) (rejecting patentee’s proposed ordinary meaning construction of “co-micronization” and finding patentee had “explicitly” defined the term through use of the phrase “i.e.”). When terms are defined using “i.e.,” the Federal Circuit has determined those “definition[s] [are] not limited to the embodiment being discussed.” See *Edwards*, 582 F.3d at 1334.

Here, Patent Owner signaled its intent to define “substantially” as “partially or entirely” through the use of “i.e.” in its discussion of the “component protective overmolding” process. The specification equates outer moldings with “protective overmolding.” For example, the outer molding of the wearable device depicted in Figure 8 is described as a “protective overmolding.” See, e.g., Ex. 1001 at 11:10–11. In discussing this molding process, the specification explains that “a securing coating may refer to any type of protective material, layer, cover, structure, liquid, gel, solid, or the like that is placed **substantially (i.e., partially or entirely)** over an

item.” *Id.* at 8:62–65 (emphasis added). Patent Owner’s declarant Dr. Young also agreed during his deposition that the use of “i.e.” in the specification “defin[ed] ‘substantially’ to include partially or entirely.” Ex. 1029 at 82:2–23.

Consistent with this definition of “substantially” as “partially or entirely,” the specification instructs that “[i]n some examples, the protective layer, inner molding, and outer molding may be *selectively, partially*, or completely applied to a given item.” Ex. 1001 at 7:27–29 (emphases added). As an alternative to “selective[]” or “partial[]” application, the “outer molding *may also* be configured to completely enclose or encase an underlying item.” *Id.* at 7:29–31 (emphasis added). Thus, consistent with the claim language, the specification makes clear the outer molding (or inner molding or protective layer) can either completely enclose/encase (*i.e.*, “cover all”) or partially cover (*i.e.*, “or substantially all”) the inner moldings.

C. Petitioner and the Board’s preliminary construction is consistent with the phrase’s ordinary meaning

The Board’s preliminary construction of “covers all or substantially all” as encompassing “on top of” is also consistent with the phrase’s ordinary meaning. The Board noted that the broadest reasonable interpretation of the word “cover” is to “put something over [or] on top of.” Institution Decision at 9 (citing Ex. 3002). Patent Owner embraces a narrower and more restrictive meaning of the term as “to be over much or all of the surface of (something)” (Response at 16), or as testified

by Dr. Young, to be “totally completely enclosing, encasing” something (Ex. 1029 at 42:23–43:5; *id.* at 41:25–42:5, 45:12–17, 80:3–5). But as explained above, regardless of the ordinary meaning of “cover,” the claims expressly recite the disjunctive condition “or substantially all.” The claims thus encompass an outer molding that covers *less than all* of the inner moldings.

The Federal Circuit has explained that “the term ‘substantially’ has numerous ordinary meanings” and that the “cases recognize the dual ordinary meaning of this term as connoting a term of approximation or a term of magnitude.” *See Deering Precision Instruments, LLC. v. Vector Distribution Sys., Inc.*, 347 F.3d 1314, 1322–23 (Fed. Cir. 2003); *see also, Smith & Nephew, Inc. v. Convatec Techs., Inc.*, IPR2013-00097, 2014 WL 2466142, at *8 (P.T.A.B. May 28, 2014) (citing *Deering*). Thus, courts must “turn to the intrinsic evidence to determine which interpretation should be adopted.” *Deering*, 347 F.3d at 1323. And as explained in section II.B, the specification expressly defines “substantially” as “partially or entirely.” Ex. 1001 at 8:62–65.

Under its broadest reasonable interpretation, the ordinary meaning of “covers all or substantially all” encompasses an outer molding partially or entirely on top of the inner moldings, so long as it is also “configured to be positioned in contact with the user,” as recited by claim 16. Even under Patent Owner’s narrow

interpretation, “covers all or substantially all” would encompass an outer molding that is only partially over the surface of something.

In short, the key term in “covers all or substantially all” is “substantially,” not “covers.” Regardless of whether a broad or a narrow interpretation of “covers” is applied, the term “substantially”—as understood in view of the specification—expands the scope of the claim to include outer moldings that enclose/encase *and* outer moldings that partially cover the inner moldings.

Moreover, Patent Owner’s identified dictionary definition is consistent with an interpretation of “cover” that does not require the outer molding to enclose or encase the inner molding. Ex. 2003. In particular, Patent Owner’s definition acknowledges that to “cover” means “to be over ***much*** or all of the surface” (Response at 16 (emphasis added)), and thus explicitly contemplates less-than-complete enclosure of the inner moldings. Indeed, an outer molding *on top of* or *over all of a surface* that is “configured to be positioned in contact with [a] user” (as recited by claim 16) falls within Patent Owner’s definition of “cover[ing]” that surface. In short, even if the claims did not recite the alternative of covering “substantially all” of the inner moldings, under either of the Board’s or Patent Owner’s dictionary definitions of “cover,” the broadest reasonable interpretation of the term encompasses an outer molding formed “on top of” the inner moldings.

III. The Board should reject Patent Owner’s proposed construction of “covers all or substantially all”

Patent Owner’s proposed construction should be rejected because it is unreasonably narrow in that it reads out limitations of the claims, improperly limits the claims to a single disclosed embodiment, and is inconsistent with the expansive claim language and non-limiting description in the specification.

A. Patent Owner’s unreasonable construction reads out the term “substantially all”

Patent Owner’s construction is unreasonable because it excises “substantially all” from the claims. Under Patent Owner’s construction, the claims would require that the outer molding encloses or encases—covers ***all*** of—the one or more inner moldings. But the claims recite that the outer molding must only “cover[] all ***or substantially all***” of the inner moldings. Thus, for Patent Owner’s construction to be consistent with the claims, “substantially all” must be read out of the claims and rendered meaningless as follows: “forming an outer molding of the wearable device that **covers all** ~~*or substantially all*~~ of the one or more inner moldings.” This is improper.

The notice function of patent claims “would be undermined . . . if courts construed claims so as to render physical structures and characteristics specifically described in those claims superfluous.” *Haemonetics Corp. v. Baxter Healthcare Corp.*, 607 F.3d 776, 781 (Fed. Cir. 2010). As a result, “claims are interpreted with

an eye toward giving effect to all terms in the claim.” *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006). This principle controls “even if it renders the claims inoperable or invalid.” *See Haemonetics*, 607 F.3d at 781; *see also Slot Speaker Techs. v. Apple Inc.*, No. 2015-2038, -2039, 2017 WL 655440, at *7–8 (Fed. Cir. Feb. 17, 2017) (nonprecedential) (reversing Board and finding obviousness even though reference did not disclose “back wall” element “follow[ing] the *entire* contour of the speaker cone,” because claim only required “back wall” to “*substantially* follow[] a curved contour of a portion of a drive unit cone” (emphases added)).

Here, Patent Owner chose to pursue claims encompassing outer moldings that enclose/encase (*i.e.*, cover all) the inner moldings, **and** outer moldings that partially cover (*i.e.*, cover substantially all) the inner moldings. Having obtained claims with wider scope than complete enclosure, Patent Owner cannot attempt to construe its claims more narrowly for purposes of invalidity by rendering meaningless the express disjunctive condition “or substantially all” recited in the claims. *See Aero Prod. Int’l, Inc. v. Intex Recreation Corp.*, 466 F.3d 1000, 1013 (Fed. Cir. 2006) (rejecting construction for claim reciting a “substantially hermetic seal” that would require the seal to “not allow any air to leak through” because such construction “would render the term ‘substantially’ illusory”).

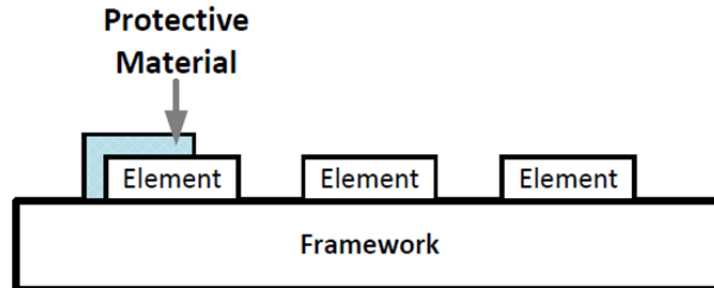
If Patent Owner had wanted to narrow its claims as it has proposed, it could have pursued claims requiring the outer molding to “completely enclose or encase” the inner moldings. *See* Ex. 1001 at 7:27–29. But Patent Owner did not. The Board should thus reject Patent Owner’s attempt to improperly narrow the claims by rendering meaningless the express limitation “substantially all.”

B. Patent Owner’s proposed construction is inconsistent with surrounding claim language

Patent Owner’s construction is also unreasonable because it is inconsistent with the broad language in other limitations of claim 16 and ignores the context in which the disputed limitation appears. In particular, the Patent Owner’s contention that “covers all or substantially all” means to “enclos[e] or encas[e] the inner moldings” (Response at 8) and requires “complete coverage” of the inner moldings (Ex. 1029 at 78:14–19), would require the outer molding to completely surround the underlying inner moldings, protective material, framework, and elements, when the other claim limitations make clear that only a “subset” of the underlying elements must be covered.

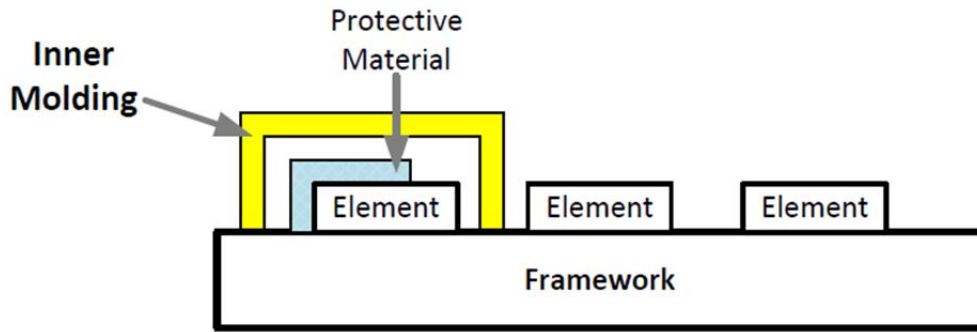
For example, the first limitation of claim 16 recites “selectively applying at least one protective material substantially over one or more of a plurality of elements coupled with a framework for a wearable device.” Ex. 1001 at 14:24–26. This limitation requires only that a protective material is “selectively applied” “substantially over” one element coupled to a framework. As shown in

Demonstrative 1, the scope of this claim limitation encompasses, for example, a protective material applied to cover part of an element on a framework.



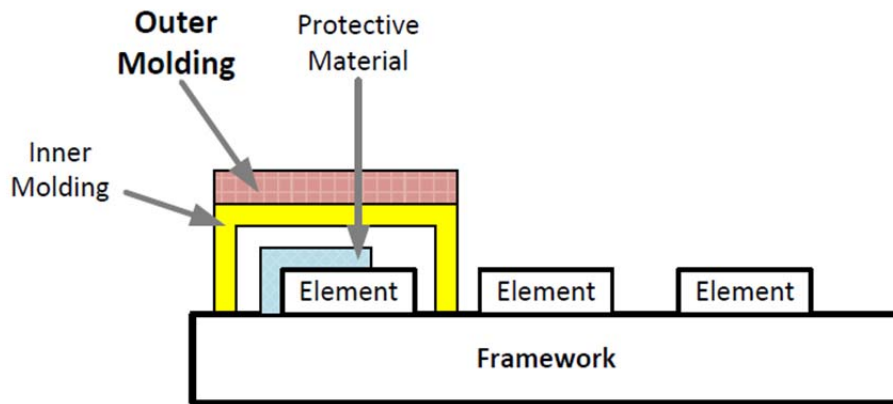
Demonstrative 1

The second limitation of claim 16 recites “forming one or more inner moldings substantially over a subset or all of the framework, the at least one protective material and the plurality of elements.” *Id.* at 14:29–31. This limitation requires only that an inner molding is “form[ed]” “substantially over a subset” of the framework, protective material, and elements. In context of the first limitation, the scope of this second limitation encompasses, for example, an inner molding formed over the protective material covering one element of a framework (as shown in Demonstrative 2).



Demonstrative 2

The disputed third limitation of claim 16 recites “forming an outer molding of the wearable device that covers all or substantially all of the one or more inner moldings.” *Id.* at 14:34–36. This limitation, in context of the first and second limitations, requires that an outer molding is “form[ed]” that “covers all or substantially all” of the inner molding. It does not require the outer molding to cover the entirety of the framework or the protective material. In context of the first and second limitations, the scope of this third limitation encompasses, for example, an outer molding formed on top of the inner molding, one element coupled to the framework, and part of the framework (as shown in Demonstrative 3).



Demonstrative 3

Importantly, in context of the first two limitations, this third limitation cannot require the outer molding to “enclos[e] or encas[e] the inner moldings,” as proposed by Patent Owner, because the claimed inner moldings are not required to enclose or encase the underlying layers, but are merely required to be formed “substantially over a subset” of the framework and its elements. Thus, although claim 16 encompasses an outer molding that completely surrounds the inner moldings, the limitations describing the protective material and inner moldings make clear that claim 16 also encompasses outer moldings that cover less than “all” of the inner moldings. In short, Patent Owner’s proposed construction of the disputed third limitation is unreasonable in context of the previous two limitations.

C. Testimony of Patent Owner’s expert cannot override the intrinsic evidence

The Board should reject Patent Owner’s efforts to redefine “covers all or substantially all” using the extrinsic evidence of Dr. Young’s testimony because his testimony conflicts with the specification and ignores the dependent claims.

Courts “should discount any expert testimony that is clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history, in other words, with the written record of the patent.”

Phillips v. AWH Corp., 415 F.3d 1303, 1318 (Fed. Cir. 2005) (en banc) (internal quotations omitted). Indeed, “where the public record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper.”

Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996).

As explained in section II, the intrinsic evidence mandates a construction of “covers all or substantially all” that encompasses an outer molding partially on top of the inner moldings. Dr. Young’s declaration (Ex. 2001) cannot eliminate the term “substantially all” from the claims or the express definition of “substantially” from the specification.

As explained in section II.B, Dr. Young agreed that the specification defines “substantially” as “partially or entirely.” Ex. 1029 at 82:2–23. But his opinion—and Patent Owner’s construction—is premised on and requires that the term “substantially” have two different meanings within the same claim. Response at

12–13, Ex. 2001 ¶ 34, Ex. 1029 at 88:25–89:10 (testifying that “substantially” in the first limitation should be interpreted differently from “substantially” in the third limitation of claim 16). Dr. Young’s conclusory assertion that the specification’s definition of “substantially” should be selectively applied conflicts with the Federal Circuit’s instruction that definitions using the term “i.e.” in the specification are “not limited to the embodiment being discussed.” *See Edwards*, 582 F.3d at 1334.

Dr. Young also ignores that the claims depending from claim 16 focus on protective properties of the *inner*—and not the outer—moldings. For example, Dr. Young criticizes Lo’s transmission medium because it “does not protect plastic housing 1474 [the inner molding].” Ex. 2001 ¶ 52. But, consistent with Petitioner and the Board’s preliminary construction, the dependent claims require the *inner* moldings—not the outer molding—to have protective properties associated with exposed exterior surfaces. *See, e.g.*, Ex. 1001 at 14:42–45 (“waterproofing,” claim 19), 14:48–49 (“oleophobic,” claim 21), 14:50–51 (“anti-bacterial,” claim 22). Indeed, Dr. Young pointed to similar “protective properties” in unrelated dependent claims as properties that would be present in outer moldings of wearable devices. *See* Ex. 2001 ¶ 51 (“waterproof[ing],” claim 6).

If the claimed inner moldings could only be completely encased—and not exposed in part (as urged by Patent Owner and Dr. Young)—these “protective

properties” of the inner moldings required by the dependent claims would be unnecessary. In fact, Dr. Young conceded that he “c[ould not] think of an example . . . of any commercial product where an inner molding that’s fully encased is antibacterial or oleophobic.” Ex. 1029 at 64:19–23, 67:7–11. Thus, Dr. Young’s testimony is inconsistent with the dependent claims, which contemplate that at least part of the inner molding may be uncovered (as opposed to fully enclosed).

Additionally, Dr. Young does not address the specification’s clear intent to capture broad scope and to *not* limit the claims to the disclosed embodiments. For example, the specification repeatedly stresses that the steps in the disclosed process “are not limited to any of the examples shown and described” and the disclosed method “may be implemented differently in the order, function, configuration, or other aspects provided and is not limited to the examples shown and described.” Ex. 1001 at 9:52–57. *See also id.* at 7:51–54, 8:52–56, 10:38–41, 11:35–38 (same); *id.* at 12:1–5 (“[B]and 900 and the elements described above in connection with FIGS. 1-9, may be varied in type, **configuration**, function, **structure**, or other aspects, without limitation to any of the examples shown and described.” (emphasis added)). In short, Dr. Young’s attempt to limit “covers all or substantially all” to a particular embodiment is inconsistent with the specification’s

rejection of a limited and narrow understanding of the disclosed embodiments and the expansive claim language.¹

Patent Owner's attempt to limit the claims to an embodiment through extrinsic evidence is also inconsistent with fundamental principles of claim construction. The Federal Circuit has instructed: "although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments." *Phillips*, 415 F.3d at 1323. Indeed, "even where a patent describes only a single embodiment, claims will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction." *See Arlington Indus., Inc. v. Bridgeport Fittings, Inc.*, 632 F.3d 1246, 1254 (Fed. Cir. 2011) (internal quotations omitted); *see also Salesforce.com, Inc. v. VirtualAgility, Inc.*, CBM2013-00024, 2014 WL 4675293, at *21 (P.T.A.B. Sept. 16, 2014) (citing *Arlington*). Here, rather than "manifest exclusion or restriction," Patent Owner demonstrated a clear intent to expand claim scope by pursuing claims that recite the disjunctive condition of "or substantially all" and

¹ For example, Dr. Young admitted that he interpreted the claims to be limited to a single figure in the specification. Ex. 1029 at 120:11–25 (testifying that claim 16 covers "what the patent teaches in figure 3"); *id.* at 114:16–24, 115:9–15.

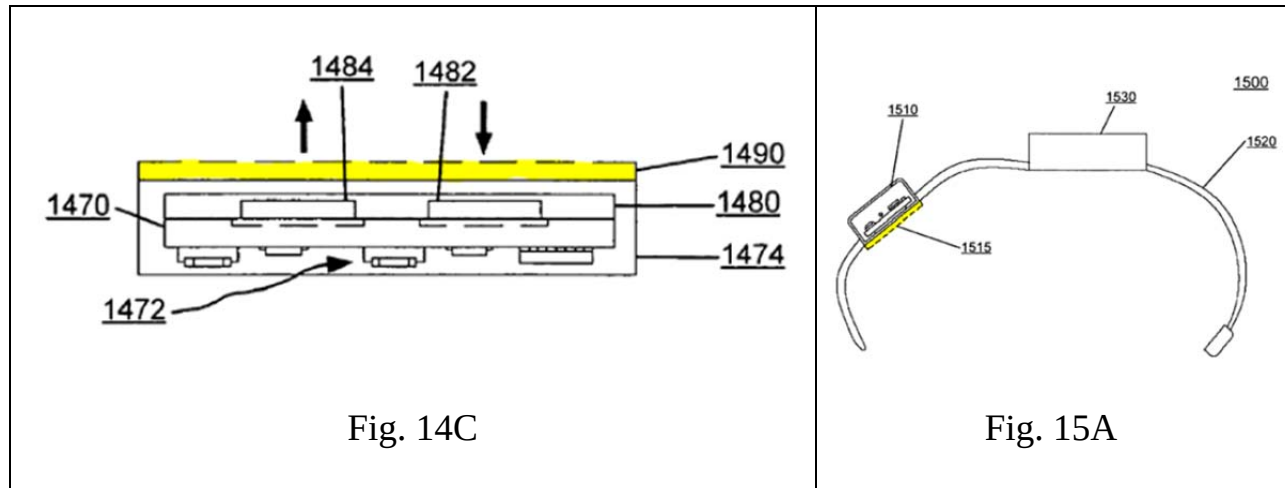
emphasizing that all disclosed embodiments are merely exemplary and can be modified “without limitation.” *See, e.g.*, Ex. 1001 at 12:1–5. Thus, Patent Owner’s attempts to cabin the claims to a specific embodiment should be rejected.

In sum, the specification and claims themselves unambiguously expand the scope of the claims to encompass more than an outer molding that encloses or encases the inner moldings. Patent Owner’s extrinsic evidence cannot serve to limit the claims in a manner that contradicts the intrinsic record. *See Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1328 (Fed. Cir. 2008) (“When construing claims, . . . intrinsic evidence of the meaning of the claims[] are the primary resources; . . . extrinsic sources like dictionaries and expert testimony cannot overcome more persuasive intrinsic evidence.”). The Board should thus assign little, if any, weight to Dr. Young’s declaration.

IV. Claims 16–19, 23, and 26 are anticipated by Lo

The Board determined there is a reasonable likelihood Petitioner will prevail on its assertion that Lo discloses a method which meets each limitation of claim 16. Institution Decision at 12–14. Under the Board’s proper broadest reasonable interpretation of “covers all or substantially all,” the overmolded transmission medium of the Lo monitor completely or partially covers the surface of the plastic housing configured to be positioned in contact with the user, and thus “covers all

or substantially all” of the inner molding as recited by claim 16. See Petition at 23–24, Ex. 1002 ¶ 58 (discussing Ex. 1003 at Figs. 14C, 15A).



A. Patent Owner’s contention that Lo’s transmission medium does not “cover all or substantially all” the inner molding is based on its unreasonable construction

Patent Owner only contests the Board’s determination that Lo discloses the last limitation of claim 16. Response at 17–22. But Patent Owner’s challenge is based on (1) its unreasonable proposed construction of “covers all or substantially all,” or (2) an unreasonable interpretation of the Board’s construction of that term.

First, Patent Owner contends Lo does not disclose an outer molding formed to “cover[] all or substantially all” of the inner molding because it does not “enclose or encase” the plastic housing of the Lo heart monitor. Response at 17–18. Patent Owner contends that covering a “single surface rather than encapsulating all surfaces is not enclosing or encasing all substantially all [*sic*] of the plastic housing” inner molding. *Id.* at 18. However, as explained sections II–III,

Patent Owner's proposed construction of "covers all or substantially all" is unreasonably narrow and inconsistent with the claim language, specification, and the phrase's ordinary meaning.

Second, Patent Owner appears to contend that Lo does not anticipate claim 16 under the Board's construction, but Patent Owner's contention again relies on its unreasonable construction. In particular, Patent Owner contends that "if an underlying layer encapsulates an object so as to present multiple sides, the top of that underlying layer should include all surfaces and sides." Response at 20. Thus, Patent Owner contends that the overmolded transmission medium disclosed by Lo does not "cover[] all or substantially all" of the inner molding because it does not cover "all sides" of the inner molding. *Id.* at 21.² Indeed, during his deposition, Dr.

² Patent Owner initially contended that the Lo transmission medium is not on "top" of the inner molding, but rather on the "bottom" of the device. Response at 21. Dr. Young jettisoned this opinion during his deposition. Ex. 1029 at 130:22–131:7. Regardless, that the transmission medium is on "top" or "bottom" of the device is immaterial to whether Lo discloses this limitation. As recited by the claims, the outer molding must be "configured to be positioned in contact with user." Ex. 1001 at 14:37–38. And Lo indicates the transmission medium is "placed in contact with a subject's skin." Ex. 1003 ¶ 118, Fig. 15A; Petition at 23–24.

Young admitted he did not offer an opinion of whether Lo anticipates claim 16 under the Board's construction. Ex. 1029 at 85:19–23, 87:4–12.

Patent Owner's conclusory assertion the outer molding must cover "all sides," or encase/enclose the inner molding, is not based on any intrinsic evidence and, as described above in sections II–III, is inconsistent with the claims, specification, and ordinary meaning of the phrase "covers all or substantially all."

B. Patent Owner's contention that Lo's transmission medium is not an outer molding is inconsistent with the claim language

Patent Owner contends Lo's overmolded transmission medium is not an outer molding because it does not have protective and ornamental features.

Response at 22–23. Patent Owner's contentions are inconsistent with the claims.

In particular, nothing in the claims requires the outer molding to have either protective properties or surface ornamentation. Indeed, as Patent Owner acknowledges, it is *dependent* claims that add limitations requiring the outer molding to have such characteristics. Claim 16 recites no such limitation.

Moreover, the dependent claims relied on by Patent Owner (claims 4, 6, and 7) depend from claim 1, not claim 16. Unlike claim 1, which is not at issue here, there are *no* claims that depend from claim 16 which require the *outer molding* to have protective properties or surface ornamentation. Rather, as discussed in section III.C, claim 16's dependent claims (claims 18–23, 26) are focused on the protective properties of the *inner moldings*—the Lo plastic housing—not the outer molding.

Ex. 1001 at 14:42–52, 14:63–64 (dependent claims referencing “the protective property” of the inner moldings recited in claim 16). And Lo’s plastic housing (the inner molding) exhibits many of the protective properties recited in these dependent claims. Petition at 25–28.

C. Patent Owner’s contention that Petitioner relies on multiple embodiments in Lo lacks merit

Patent Owner contends that Petitioner’s anticipation challenge relies on different embodiments disclosed by Lo. This contention lacks merit. Petitioner’s anticipation challenge relies on a single embodiment disclosed illustrated by Figure 15C in Lo. Petition at 21–24.

This embodiment is one of three related embodiments of an “Encapsulated Ultrasonic Monitor” disclosed by Lo. Ex. 1003 ¶¶ 121–27. Each embodiment includes a plastic housing that encapsulates a subset or all of the printed circuit board. *Id.* at Figs. 14A (1414), 14B (1444), 14C (1474). In describing the first embodiment, Lo indicates that the plastic housing could be a material “such as ABS plastic.” Ex. 1003 ¶ 123.

Lo describes an exemplary material for this plastic housing, which Lo suggests shares similarities across all three embodiments. For example, Lo discloses “[t]he ultrasonic monitor can be sealed using an ABS plastic material, gel material, or both” and “both the transducer side and the electronic component side [of the wearable device] can be sealed using an ABS plastic material.” *Id.* ¶ 121;

Petition at 23. Lo also explains the printed circuit board framework “can be entirely encapsulated in plastic . . . to keep[] the system of the ultrasonic monitor protected from debris such as dirt, dust and water.” Ex. 1003 ¶ 62; Petition at 22.

Patent Owner also contends the Lo embodiment illustrated by Figure 14C is not the same embodiment illustrated in Figure 15A. Again, Petitioner relies solely on Lo’s Figure 14C embodiment in its anticipation challenge. Petitioner cites Figure 15A as an example of how the transmission medium (outer molding) can be positioned in contact with the user. Petition at 23–24; Ex. 1002 ¶¶ 49, 58. Indeed, Lo explains that oil-based transmission mediums are “well suited for overmolding” and can “be placed in contact with a subject’s skin.” *Id.*; Ex. 1003 ¶¶ 114, 118.

V. Claims 20–22 and 24–25 are invalid as obvious

A. Petitioner met its burden to establish obviousness

Patent Owner contends that Petitioner did not show a person of ordinary skill in the art (POSITA) had reason to combine the relevant references. Response at 27–28. Patent Owner’s contention is unsupported by evidence and lacks merit.

In particular, Petitioner offers a detailed explanation and rational underpinning for its contention that a POSITA would have combined the relevant references in a manner that renders claims 20–22 and 24–25 obvious, supported by the testimony of Dr. Cairns, an expert in the field. Petition at 28–37, Ex. 1002 ¶¶ 64–68. This evidence is unrebutted. Petitioner explains how the relevant

dependent claims merely add well-known improvements to the claimed method that could have been accomplished by a POSITA applying well-known techniques to the claimed method with predictable results. *See id.*; *see also KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416–17 (2007).

B. The combination of Lo and Huang and Lo and the Handbook of Thermoplastic Elastomers renders claims 20–22, 24 obvious

Patent Owner also contends that Petitioner did not expressly consider whether the Lo heart monitor would “retain good ultrasonic transmission properties” in combination with the protective coatings taught by Huang (claims 20–22) and the Handbook of Thermoplastic Elastomers (claim 24). Response at 29–31. Patent Owner’s contention is unsupported by evidence and conflicts with the proper legal framework under *KSR* mandating a flexible approach to obviousness.

In particular, even if Patent Owner’s contention were supported by evidence, it ignores the simple fact a POSITA would have naturally selected a coating that does not render the Lo heart monitor useless. Supported by unrebutted testimony from Dr. Cairns, Petitioner explains that “[t]he use of a variety of hydrophobic materials in coatings, such as the one described in *Huang*, was well understood in the prior art.” Petition at 29; Ex. 1002 ¶ 64. Huang teaches that the relevant protective coatings (hydrophobic, oleophobic, and anti-bacterial) are “suitable for application to both a metal surface and a nonmetal surface of an electronic device.”

See id., Ex. 1007 ¶ 6; *see also* Petition at 29–33, Ex. 1002 ¶¶ 64–66. Thus, Huang provides evidence that a POSITA would have understood the advantages and limitations of using such protective coatings and would have known how to select protective coatings for the Lo heart monitor providing the desired protective properties without impairing the device’s functionality. *See* Petition at 33–35; Ex. 1002 ¶ 67; Ex. 1006 at 293, 303 (same for “medical-grade thermoplastic elastomer” recited in claim 24); *see also ClassCo, Inc. v. Apple, Inc.*, 838 F.3d 1214, 1219 (Fed. Cir. 2016) (“The rationale of *KSR* does not support [patentee’s] theory that a person of ordinary skill can only perform combinations of a puzzle element A with a perfectly fitting puzzle element B. To the contrary, *KSR* instructs that the obviousness inquiry requires a flexible approach.”).

Citing *In re Seid*, 161 F.2d 229, 231 (CCPA 1947), Patent Owner also contends (for claims 20–22) a “‘design choice’ rationale is inapplicable where the change is not aesthetic or a mere rearrangement of the elements.” Response at 29–30. But Patent Owner ignores that when “a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *KSR*, 550 U.S. at 417. And Huang provides evidence that applying protective coatings to an electronic device without impairing the device’s desired functionality was known in the art, and that a

POSITA would have known how to select protective coatings taught by Huang to predictably improve the Lo heart monitor in the same way. Petition at 28–33; Ex. 1002 ¶¶ 64–66. Thus, under *KSR*, the application of the known protective coatings taught by Huang according to their established functions to predictably improve the Lo heart monitor would have been obvious.

C. The combination of Lo and Toyoda renders claim 25 obvious

Patent Owner makes a conclusory and unsupported assertion that Petitioner did not meet its burden to demonstrate that this claim is obvious. However, Petitioner explains that the process of removing and reapplying inner moldings after inspecting them for defects is a fundamental manufacturing process for electronic devices, as evidenced by Toyoda’s disclosure of a process for forming, inspecting, and removing and re-applying defective curable resin layers on electronic devices. Petition at 35. Supported by un rebutted testimony from Dr. Cairns, Petitioner explains that a POSITA would have naturally used the Toyoda manufacturing process to improve the reliability of Lo’s moldings in the same way, and to avoid the problem of otherwise scrapping the entire device instead of reapplying a defective inner molding. *Id.* at 36–37; Ex. 1002 ¶ 68.

VI. Conclusion

The Board should reject Patent Owner’s arguments and find claims 16–26 unpatentable and cancel the claims.

Respectfully submitted,

Dated: March 9, 2017

By: /Naveen Modi/
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CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), the undersigned certifies that the foregoing Petitioner's Reply contains, as measured by the word-processing system used to prepare this paper, 5,462 words. This word count does not include the items excluded by 37 C.F.R. § 42.24.

Respectfully submitted,

Dated: March 9, 2017

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CERTIFICATE OF SERVICE

I hereby certify that on March 9, 2017, a copy of the foregoing Petitioner's
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