

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CONOPCO, INC. dba UNILEVER,
Petitioner,

v.

THE PROCTER & GAMBLE COMPANY,
Patent Owner.

Case IPR2013-00505
Patent 6,974,569 B2

Before LORA M. GREEN, GRACE KARAFFA OBERMANN, and
RAMA G. ELLURU, *Administrative Patent Judges*.

OBERMANN, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.C.S. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

A. Background

Conopco, Inc. dba Unilever (“Petitioner”), filed a Petition requesting an *inter partes* review of claims 1–33 of U.S. Patent No. 6,974,569 B2 (Ex. 1001, “the ’569 patent”). Paper 4 (“Pet.”). The Procter & Gamble Company (“Patent Owner”) filed a Preliminary Response. Paper 8. We instituted trial on a single ground of unpatentability: Whether claims 1–12, 15, 17–19, 23, 26, 28–30, and 32 would have been obvious over Kanebo under 35 U.S.C. § 103.¹ Paper 9 (“Dec.”).

Within the time periods allowed by our rules, Patent Owner filed a Response and Petitioner filed a Reply. Paper 34 (“PO Resp.”); Paper 48 (“Reply”). The parties also fully briefed Patent Owner’s Motion to Exclude Evidence and Petitioner’s Motion to Exclude Evidence. *See* Paper 57 (“PO Mot. Ex.”); Paper 61 (“PO Mot. Ex. Resp.”); Paper 63 (“PO Mot. Ex. Reply”) (papers relating to Patent Owner’s motion); and Paper 58 (“Pet. Mot. Ex.”); Paper 60 (“Pet. Mot. Ex. Resp.”); Paper 62 (“Pet. Mot. Ex. Reply”) (papers relating to Petitioner’s motion).

A combined oral hearing was conducted on November 5, 2014, in this proceeding and IPR2013-00509, which relates to U.S. Patent No. 6,451,300 B1, (“the 509 Proceeding”), and involves the same parties. Paper 67 (“Tr.”). Concurrently herewith, we issue a Final Written Decision in the 509 Proceeding.

We have jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons set forth below, we determine that Petitioner has demonstrated, by a preponderance of the evidence, the unpatentability of claims 1–12, 15, 17–19, 23, 26, 28–30, and 32 as obvious over Kanebo under 35 U.S.C. § 103.

¹ Kanebo, JP 9-188614 (July 22, 1997) (English translation) (Ex. 1006).

B. Related Proceedings

The '569 patent is the subject of co-pending district court litigation initiated after the filing of the Petition. *See Procter & Gamble Co. v. Conopco, Inc.*, 1:13-cv-00732-TSB (S.D. Ohio) (filed Oct. 10, 2013). Petitioner filed a second petition seeking *inter partes* review of claims 13, 14, 16, 20–22, 24, 25, 27, 31, and 33 of the '569 patent, which we denied. IPR2014-00506, Paper 17 (denying review).

C. The '569 Patent

The '569 patent is directed to a shampoo composition and method for providing a combination of anti-dandruff efficacy and hair conditioning. Ex. 1001, Abstract; 2:44–46; 2:66–3:1. Patent Owner sells shampoo under the Head & Shoulders[®] umbrella of products, which are alleged to embody the invention of the challenged claims, and are relevant to Patent Owner's arguments, discussed below, regarding secondary considerations. PO Resp. 7–8.

The disclosure of the '569 patent describes a composition comprising certain shampoo ingredients in specified weight-percent ranges. *Id.* at 2:51–65. The disclosure further informs that, whether the requisite criteria of anti-dandruff efficacy and hair conditioning for a given composition are met, depends upon, “for example, the level and type of cationic polymer [for conditioning] employed in the composition, the type of anti-dandruff agent employed, the amount of anionic surfactant employed [for hair cleansing], the level and type of polyalkylene glycol employed, if any, and the rheological characteristics of the coacervate.” *Id.* at 2:36–43; *see id.* at 1:24–28; 1:56–58.

In addition to the compositional elements of the shampoo formulation, the claims specify four index values that correspond to four properties of a conditioning, anti-dandruff shampoo: (1) a bioavailability and coverage index,

which corresponds to anti-dandruff efficacy; (2) a first conditioning index, which provides an indication of the comb-ability of wet hair; (3) a second conditioning index, which assesses clean hair feel; and (4) a minimal inhibitory concentration index, which measures the ability of a shampoo composition to inhibit growth of microorganisms. *Id.* at 44:44–64; 46:20–41 (independent claims 1 and 29); *see id.* at 2:25–35, 58–65 (explaining that the specified indices provide an indication of those four properties). The indices are tabulated for three of five disclosed examples of the claimed shampoo composition. *Id.* at 43:15–44:41.

The disclosure also includes a discussion of experimental methods useful for determining the values of the four indices. *Id.* at 33:26–43:11. The first index, which relates to bioavailability and coverage of the anti-dandruff active, is ascertained by evaluating inhibition of *Malassezia furfur* growth on agar contact plates. *Id.* at 33:33–45. The second index, also called the first conditioning index, is evaluated by grading the force required to pull a comb through hair switches that are attached to a force transducer. *Id.* at 36:19–24. The third index, also called the second conditioning index, is assessed by trained sensory panelists, using thumb and forefinger to assess the clean hair feel of hair switches. *Id.* at 38:66–39:11. The fourth index corresponds to a minimal inhibitory concentration that “is indicative of anti-dandruff efficacy,” and is determined by finding the lowest dilution of an anti-microbial active that is effective to yield no growth of *Malassezia furfur* in sterile petri dishes. *Id.* at 42:12–34.

D. Illustrative Claim

We initiated *inter partes* review of claims 1–12, 15, 17–19, 23, 26, 28–30, and 32. Claims 1 and 29, the independent claims, specify a shampoo composition comprising an anionic surfactant, a non-volatile conditioning agent, an anti-

dandruff particulate, and a cationic polymer. Claim 1 further requires a suspending agent. The claims specify weight-percent ranges for the components.

Claim 1, reproduced below, is illustrative of the claimed subject matter.

1. A shampoo composition comprising:
 - a) from about 5% to about 50%, by weight, of an anionic surfactant;
 - b) from about 0.01% to about 10%, by weight, of a non-volatile conditioning agent;
 - c) from about 0.1% to about 4%, by weight, of an anti-dandruff particulate;
 - d) from about 0.02% to about 5%, by weight, of a cationic polymer;
 - e) water;
 - f) from about 0.1% to about 10%, by weight of the composition, of a suspending agent;wherein said composition:
 - i. has a bioavailability/coverage index value, of at least about 1.25;
 - ii. has a first conditioning index value, of less than or equal to about 1.0;
 - iii. has a second conditioning index value, of at least about 1.5; and
 - iv. has a minimal inhibitory concentration index value, of at least about 0.125.

II. ANALYSIS

A. Claim Construction

In an *inter partes* review proceeding, we give claim terms in unexpired patents their broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b). Under that standard, we assign claim terms their ordinary and customary meaning, as understood by a person of ordinary skill in the art, in the context of the entire patent disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). If an inventor acts as his or her own lexicographer, the definition must be set forth in the specification with reasonable clarity, deliberateness, and precision. *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1249 (Fed. Cir. 1998).

The independent claims—claim 1 and 29—specify a composition comprising certain shampoo ingredients, in amounts that fall within specified weight-percent ranges. Those claims further specify that the shampoo composition must meet certain minimum values for four indices—specifically, an anti-dandruff efficacy index, first and second conditioning indices, and a minimal inhibitory concentration index. Ex. 1001, 44:44–64; 46:20–41 (independent claims 1 and 29). The specification sets forth experimental methods useful for determining the values of those four specified indices. *Id.* at 33:26–43:11. The crux of the dispute is whether the four specified indices carry a requirement to use the particular experimental methods set forth in the written description to attain the specified shampoo composition.

Petitioner argues that the four index values are proxies for four optimized beneficial shampoo properties that, at the time of the invention, were well-known as desirable in a shampoo composition. In Petitioner’s view, a person exercising ordinary skill in the art would have had the desire, and the ability, to improve the composition of Kanebo’s Example 10 by manipulating, and optimizing for, those four known, beneficial properties. That artisan, thereby, would have arrived at a shampoo composition meeting both the compositional limitations and the minimum index values specified in the claims.

Patent Owner counters that the disclosure of the ’569 patent “specifically provides that the indices must be determined using the methods disclosed in the specification.” PO Resp. 14 (citing Ex. 1001, 3:15–17; 2:58–65, 33:25), 22 (one “would have understood that the indices must, in fact, be measured using the techniques specified in the specification”) (emphasis omitted); *see* Ex. 2015 ¶¶ 43–

49.² We disagree. The claims are directed to a shampoo composition, and do not require subjecting that composition to the experimental methods disclosed in the specification for evaluating the four indices. Neither the express claim language, nor the disclosure, limits the methods that may be used to evaluate the four indices. The index values, set forth in the claims, are proxies for a shampoo that has been optimized for corresponding beneficial shampoo properties. A shampoo meeting the compositional limitations of the claims will not necessarily satisfy the index values, absent optimization of the properties that correspond to the indices; however, when those properties are optimized, the index values are satisfied by the composition. Ex. 1001, 1:11–19; 2:25–43; 3:18–35; 3:49–4:6.

In Patent Owner’s view, the specification of the ’569 patent introduces, with sufficient clarity, a special definition for the indices that justifies importing into the claims a requirement that the particular tests and assays disclosed in the written description must be used to optimize for those properties. PO Resp. 14 (citing Ex. 1001, 3:15–17, 2:58–65, 33:25). At the oral hearing, counsel failed to address adequately our concern that, under Patent Owner’s proposed construction,

² Exhibit 2015 is a declaration of Patent Owner’s witness, Dr. Robert Y. Lochhead, filed July 25, 2014. Dr. Lochhead has been employed in academia for about 25 years and has significant experience practicing and teaching in the field of polymer chemistry. Ex. 2015 ¶¶ 6–7, 9. We are persuaded that Dr. Lochhead is an expert in polymer chemistry. His level of experience directly related to formulating shampoos, however, is less clear: He states that “some” of the 24 patents and applications in which he is named as an inventor “relate to shampoo compositions.” *Id.* ¶ 8. He states that he has “consulted widely for the personal care industry, particularly in fields of chemistry, polymer chemistry, and other industrial chemical applications.” *Id.* ¶ 11. He also states that he has “authored alone, or with colleagues, a number of articles and book chapters” that relate to shampoo formulations, without identifying particular individual contributions that he made to that work. *Id.* ¶ 12.

infringement of the claims would turn on whether the composition was subjected to the tests and assays set forth in the written description: In other words, where two identical shampoo samples are drawn from the same shampoo bottle, a first sample subjected to the tests disclosed in the specification would infringe, but a second sample, not so tested, would not infringe. *See* Tr. 43:19–50:17. Such a construction is untenable, where claims 1 and 29 are directed to a composition.

B. The Challenged Claims are Unpatentable over Kanebo

We instituted inter partes review on the sole question whether the subject matter of claims 1–12, 15, 17–19, 23, 26, 28–30, and 32 would have been obvious over Kanebo at the time of the invention. Dec. 18. As explained below, a natural desire to improve known shampoo formulas would have prompted an artisan, exercising ordinary skill, to optimize for all four of the desirable properties that are represented by the four index values specified in the claims. A preponderance of the evidence, moreover, establishes that at least one test for optimizing each property—comparable to that disclosed in the specification—was available at the time of the invention, and would have been within the level of ordinary skill in the art of shampoo formulation. Those comparable prior art tests would have facilitated the formulation of a shampoo in which the four beneficial properties, associated with the four specified index values, would have been optimized.

Thus, as discussed below, by optimizing for those four known, beneficial properties in Kanebo’s Example 10 shampoo formulation, a person exercising no more than ordinary skill in the art would have had the desire, and the tools, to achieve a formulation that meets claims 1–12, 15, 17–19, 23, 26, 28–30, and 32.

*1. A Preponderance of Evidence
Shows That Kanebo's Example 10 Shampoo
Meets the Compositional Elements of the Claims*

Petitioner's claim charts, substantive arguments, and supporting Declarations of Arun Nandagiri³ establish that the subject matter of claims 1–12, 15, 17–19, 23, 26, 28–30, and 32 would have been obvious over the shampoo composition disclosed in Example 10 of Kanebo. Pet. 8–22; Ex. 1006 ¶ 37 (Kanebo's Example 10); *see* Ex. 1003 (First Nandagiri Declaration, filed Aug. 14, 2013); Ex. 1035 (Second Nandagiri Declaration, filed Sept. 22, 2014) (public version).⁴ Kanebo's Example 10 discloses a shampoo formulation that meets each compositional element of the challenged claims, in a weight-percent amount that falls squarely within the ranges required by those claims: “Ammonium lauryl sulphate [an anionic surfactant] 10.0 [%],” “Dimethyl polysiloxane [a conditioning agent] (1,000 cSt; 25°C) 5.0 [%],” “Zinc pyrithione 0.5 [%],” “Cationized cellulose

³ Petitioner's witness, Dr. Nandagiri, has over 30 years of experience formulating shampoos, and in that capacity, has “been personally involved in the formulation of hundreds of hair care products.” Ex. 1003 ¶ 4. Dr. Nandagiri has significant experience formulating and testing both conditioning and anti-dandruff shampoos. *Id.* ¶¶ 5–7, 9. Dr. Nandagiri has the requisite familiarity with shampoo formulation and testing to opine on the views of a hypothetical person of ordinary skill in the art. *See id.* ¶¶ 4–10. We find his testimony credible and persuasive.

⁴ Where a party cites an exhibit filed under seal in this proceeding, we refer to the public version. Our decision does not require reference to confidential information. The record, however, will be maintained undisturbed, pending the outcome of any appeal taken from this decision. At the conclusion of any appeal, or if no appeal is taken, the documents will be made public. *See* Trial Practice Guide, 77 Fed. Reg. 48,756, 48,760–61 (Aug. 14, 2012). Either party may file a motion to expunge the sealed documents from the record pursuant to 37 C.F.R. § 42.56. Any such motion will be decided after the conclusion of any appeal or the expiration of the time period for filing an appeal.

derivative [a cationic polymer] (Trade name: Catinal HC-200 manufactured by Toho Kagaku Kogyo) 1.0 [%],” “[w]ater,” and “Ethylene glycol dimyristate [a suspending agent] 2.0 [%].” Pet. 8–11 (citing Ex. 1006 ¶ 37); *cf.* Ex. 1001, 44:44–47:2 (challenged claims, including independent claims 1 and 29).

Patent Owner does not dispute effectively that Kanebo’s Example 10 discloses a shampoo formulation that includes each ingredient in a weight-percent amount that meets the challenged claims. Instead, Patent Owner directs us to evidence that a shampoo may satisfy the compositional requirements of the claims, yet fail to meet the specified index values. PO Resp. 44 (citing Ex. 2015 ¶ 74). Patent Owner, thus, frames the dispute as whether it would have been obvious “to manipulate the components of a shampoo,” such as the shampoo disclosed in Kanebo’s Example 10, “to meet all four [specified] indices at once.” PO Resp. 21; *see* Reply 3 (Patent Owner “does not dispute that Kanebo’s Example 10 falls squarely within the ’569 patent’s compositional limits.”); *see also* Reply 6 (comparing components of Kanebo’s Example 10 with components of claim 1). We address that dispute in the next section.

*2. A Desire to Optimize Known Beneficial Shampoo
Properties Would Have Prompted a Modification of Kanebo
To Attain a Composition that Meets the Specified Index Values*

We find that one of ordinary skill in the art would have been prompted to optimize for recognized, beneficial properties—including those associated with the specified indices—in known shampoo compositions. A desire to improve those properties in the composition of Kanebo’s Example 10 would have led to a shampoo formulation that meets the compositional elements, as well as the index values, required by the challenged claims. *See* Ex. 1001, 44:56–64; 46:32–41 (four index values in the independent claims).

In that regard, the '569 patent reveals that each of the four specified index values is an indicator of a beneficial shampoo property—namely, the four index values are proxies for anti-dandruff efficacy, wet hair comb-ability, clean hair feel, and anti-microbial activity. Ex. 1001, 1:25–35, 3:18–35, 3:49–4:6; *see* Ex. 1003 ¶¶ 17–20. The specified index values correspond to an optimization of those four properties in a single shampoo formulation. Ex. 1035 ¶¶ 13, 23–42 (and citations to the record therein) (declaration testimony of Dr. Nandagiri).⁵

A person of ordinary skill in the art would have recognized those properties as desirable and beneficial in a shampoo composition. Ex. 1003 ¶¶ 17–20, 23–29 (declaration testimony of Dr. Nandagiri). A natural desire to maximize known, beneficial properties would have prompted that person to perform routine experiments to optimize for those four properties in Kanebo's Example 10. Pet. 18–19; *see In re Aller*, 220 F.2d 454, 456–58 (CCPA 1955) (“where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation”).

We find unpersuasive Patent Owner's counterview that an ordinary artisan would not have been prompted to select the four specific properties, represented by the four specified indices, from among the many beneficial shampoo properties that were known in the art, and recognized as desirable, at the time of the invention. PO Resp. 36–40. On that point, Patent Owner argues that, at the time

⁵ Dr. Nandagiri has worked extensively in the field of shampoo formulation and testing for over 30 years. Ex. 1003 ¶¶ 4–10; Ex. 1004 (curriculum vitae). Patent Owner directs us to no persuasive evidence that Dr. Lochhead has had any significant experience formulating or testing shampoos after about 1990. Ex. 2015 ¶¶ 5–12; Ex. 2016 (curriculum vitae). Where their testimony conflicts, we find that Dr. Nandagiri's opinions, regarding the state of the art in 1999, are more credible than those of Dr. Lochhead. *See supra* notes 2, 3.

of the invention, artisans in the field were aware of at least “21 different parameters that a formulator might use to evaluate shampoo performance.” *Id.* at 10 (citing Ex. 1021, 22:35–43). But Patent Owner acknowledges that “the universe of properties that you could evaluate for a shampoo certainly would be finite.” Tr. 50:20–22 (counsel for Patent Owner).

A preponderance of the evidence persuades us that it would have been obvious to select the four beneficial shampoo properties, represented by the four specified indices, from among the finite universe of known desirable shampoo properties. “When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions,” an ordinary artisan “has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.” *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 421 (2007).

A skilled artisan possesses ordinary creativity and is not an automaton. *Id.* A natural desire to improve the shampoo disclosed in Kanebo’s Example 10 would have prompted experimentation, utilizing available techniques and assays, to optimize for all of the known beneficial properties—including those associated with the specified index values. *In re Peterson*, 315 F.3d 1325, 1330 (Fed. Cir. 2003) (“The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages.”).

3. Tests Known in the Art Would Have Permitted One to Optimize for the Four Beneficial Properties in Kanebo's Composition and, Thereby, Attain the Specified Index Values

We answered above the question whether an ordinary artisan would have had the desire to modify the shampoo of Kanebo's Example 10 to optimize for the four beneficial properties that are represented by the four specified index values. We next turn to whether that artisan, exercising no more than ordinary skill in the art at the time of the invention, would have had the tools and acumen to simultaneously optimize for those properties in Kanebo's Example 10 shampoo.

i. The First Index: Anti-Dandruff Efficacy (Bioavailability/Coverage)

Patent Owner acknowledges that the first specified index value relates to "bioavailability/coverage" of the anti-dandruff agent and "measures the anti-dandruff efficacy of a shampoo through the degree to which the anti-dandruff agent is able to spread across the scalp to treat the affected areas." PO Resp. 23. Skin diffusion assays for evaluating the anti-dandruff efficacy of a shampoo were known at the time of the invention, and would have provided a mechanism for optimizing that property in Kanebo's shampoo. Ex. 1003 ¶ 17 (citing Ex. 1023, 1337-40; Ex. 1020, 6:58-7:17).

For example, Shin discloses an assay that involves treating skin discs with the anti-dandruff agent zinc pyridinethione ("ZPT"). Ex. 1020, 7:19-49 (Shin's Example 2); Ex. 1003 ¶ 81. Shin, like the '569 patent, discloses an assay that permits one to assess and optimize a shampoo's effect on the growth of the dandruff-causing microorganism *Malassezia furfur*. Ex. 1001, 33:26-36:10; Ex. 1020, 1:28-32, 44; 7:19-49 (Shin Example 2); Ex. 1003 ¶ 21; Ex. 1035 ¶ 29 (citing Ex. 1051, 1187); *see id.* at 6:58-7:17; Ex. 1003 ¶ 81. Based on the whole record, we are persuaded that Shin's test is comparable to the assay disclosed in

the '569 patent for evaluating anti-dandruff efficacy—that is, bioavailability and coverage. Ex. 1020, 3:17–18; 7:19–37; Ex. 1003 ¶ 17 (and citations to the record therein); Ex. 1035 ¶¶ 24–30 (and citations to the record therein).

Woods discloses other tests that one of ordinary skill in the art would have recognized as useful for evaluating the anti-dandruff efficacy of a shampoo. Ex. 1003 ¶ 17 (citing Ex. 1023, 1337–40) (disc diffusion test of Woods); *see* Ex. 1035 ¶ 31 (providing further evidence that one of ordinary skill in the art would have “appreciate[d] that the organism(s) and the agar medium disclosed in Woods” could have been “modified to run the test with fungi instead of bacteria” and, further, would have recognized Woods as providing an assay “comparable to the bioavailability test of the '569 patent”) (citation omitted).

We are not persuaded by Patent Owner’s counterview that the tests described in Shin and Woods “are materially different from” the tests described in the '569 patent. PO Resp. 25; *see id.* at 24–27 (discussing perceived differences). On that point, Patent Owner argues that ZPT is mechanically deposited, in particulate form, on the pigskin in the assay disclosed in the '569 patent; in Shin, by contrast, the ZPT is solubilized and spreads by diffusion across the treated skin disc. *Id.* at 26 (citations omitted). A preponderance of the evidence, however, persuades us that, notwithstanding the differences identified by Patent Owner, “Shin discloses a test that is very similar and certainly comparable to the bioavailability test of the '569 patent.” Ex. 1035 ¶ 30; *see id.* ¶¶ 24–30 (explaining why the differences raised by Patent Owner, regarding the solubilized and suspended forms of the anti-dandruff agent, are not material to whether the Shin discloses a test comparable to the assay disclosed in the '569 patent); Ex. 1003 ¶¶ 25, 35 (explaining, with objective support, why Shin is not materially different from the anti-dandruff efficacy test that is disclosed in the '569 patent).

Patent Owner argues also that the experimental methods disclosed in Woods would not have been recognized by an ordinary artisan as useful for optimizing anti-dandruff efficacy (that is, bioavailability and coverage) in the shampoo of Kanebo's Example 10. PO Resp. 25–26. We are persuaded, however, that Woods provides such a tool. Ex. 1035 ¶ 31; Ex. 1042, 108:11–20. In that regard, Petitioner is not required to show that the tests disclosed in Shin and Woods are identical to the assay disclosed in the '569 patent. It is enough that the techniques disclosed in the prior art would have placed within the technical grasp of an ordinary artisan a mechanism for optimizing anti-dandruff efficacy in the shampoo of Kanebo's Example 10. *See* Ex. 1035 ¶¶ 24–31; *see also* Reply 8 (and citations to the record therein); Ex. 1037, 63:14–64:25; 69:13–74:9 (deposition testimony of Patent Owner's witness, Dr. Lochhead, discussing prior tests that were available for assessing anti-dandruff efficacy); Ex. 1042, 65:2–10 (deposition testimony of Patent Owner's witness, Dr. Geis, explaining that tests for anti-dandruff efficacy were known prior to the invention of the '569 patent).

A preponderance of the evidence persuades us that prior art methods and assays, comparable to those disclosed in the '569 patent, and available at the time of the invention, would have permitted an ordinary artisan to optimize for anti-dandruff efficacy in the shampoo composition of Kanebo's Example 10, resulting in a formulation that satisfies the first specified index value. *See* Ex. 1003 ¶¶ 17, 81; Ex. 1035 ¶ 50 (and citations to the record therein).

ii. The Second Index: Wet Hair Comb-Ability

The second specified index, denoted the “first conditioning index” in the '569 patent, is an indicator of wet hair comb-ability. Ex. 1001, 2:30; 3:54–57. The '569 patent discloses a method of assessing that property by measuring, with a

transducer, the force needed to pull a comb through a switch of hair. Ex. 1001, 36:11–38; 37:31–38:58. Comparable combing force assays, which measure the force required to pull a comb through a switch of hair, were known at the time of the invention, and would have provided a mechanism for optimizing wet hair comb-ability, as represented by the second specified index. Ex. 1003 ¶¶ 18, 82; Ex. 1021, 25:36–61; 26:1–53; Ex. 1024, 380–381.

Patent Owner comes forward with no evidence that casts doubt on a finding that prior art wet comb-ability tests would have provided a mechanism for optimizing that property in Kanebo’s Example 10 shampoo. *See, e.g.*, PO Resp. 30–31 (moving from discussion of first index to discussion of third index, without addressing the second index—which pertains to wet hair comb-ability). A preponderance of the evidence shows that prior art methods and assays, comparable to those disclosed in the ’569 patent, were available at the time of the invention. Those tools would have permitted an ordinary artisan to optimize for wet hair comb-ability in the shampoo of Kanebo’s Example 10 and, thereby, attain a formulation that satisfies the second specified index value.

iii. The Third Index: Clean Hair Feel

The third specified index, or “second conditioning index,” relates to another beneficial property, which the ’569 patent refers to as “clean hair feel.” Ex. 1001, 38:60–64. The specification discloses a procedure in which “[t]rained sensory panelists” evaluate by touch “the ‘clean hair feel’ attribute” of hair switches treated with product against control samples. *Id.* at 38:66–39:11. That procedure, which Patent Owner would have us read into the claims, includes, for example, the exact number of seconds that the product must be brushed through the hair switch (“30 seconds”), the rate at which such strokes must be applied (“one stroke/second”),

and the precise placement of the trained panelist's fingers on the hair switch during the assessment ("thumb is placed on the front of the hair switch while the index and middle fingers are on the back of [the] hair switch"). *Id.* at 40:28–42:11.

Comparable tests were available at the time of the invention, and would have permitted one to optimize the sensory property of clean hair feel in the shampoo of Kanebo's Example 10. Ex. 1003 ¶¶ 19, 83; Ex. 1021, 22:12–44, Table I; Ex. 1035 ¶ 36. For example, tests for optimizing such subjective tactile attributes as "wet feel" and "residue" by "trained judges" were available and comparable to the disclosed method of assessing clean hair feel. Ex. 1003 ¶ 82 (quoting Ex. 1021, 22:28–43). Petitioner, furthermore, argues persuasively that "Kanebo itself" discloses "the use of trained panelists for assessing properties such as 'spreadability,' 'running of fingers through hair,' 'squeaking of the hair upon rinsing,' and 'feeling upon rinsing.'" Reply 9 (citing Ex. 1006 ¶¶ 21–34, Tables 1–2). We also agree with Petitioner that an ordinary artisan would have recognized the importance of "avoidance of 'sticky clumps' of [anti-dandruff] particles to minimize negative sensory properties." *Id.* at 8 (citing Ex. 1009, 2:1–5).

We are persuaded by Petitioner's evidence that the tactile features of hair treated with a shampoo product correspond to the clean hair feel property represented by the third specified index value. Ex. 1037, 99:17–100:9; 102:9–20. Based on the whole record developed during trial, we determine that an ordinary artisan would have had the desire, and the tools, to evaluate and optimize for that property in the shampoo composition of Kanebo's Example 10.

iv. The Fourth Index: Anti-Microbial Activity

The fourth specified index corresponds to minimal inhibitory concentration—an indicator of the beneficial shampoo property of anti-microbial

activity—which is optimized by discerning the lowest dilution of an anti-microbial active that is effective to yield no growth of *Malassezia furfur* in sterile petri dishes. Ex. 1001, 42:19–34. *Malassezia furfur* is the standard fungus used to assess the antifungal properties of a shampoo, consistent with the etiology of dandruff. Ex. 2013 ¶ 17.

The '569 patent discloses a standard assay for determining that minimal inhibitory concentration. Ex. 1001, 42:19–34. Specifically, the disclosure describes an assay wherein the minimal inhibitory concentration index is determined by finding the lowest dilution of an anti-microbial active that is effective to yield no growth of *Malassezia furfur* in sterile petri dishes. *Id.* at 42:22–34.

Comparable assays for calculating minimal inhibitory concentrations were known at the time of the invention. Ex. 1003 ¶¶ 20, 81; Ex. 1020, 6:58–7:17. Here again, Patent Owner comes forward with no evidence that casts doubt on a finding that prior art tests were available at the time of the invention for optimizing anti-microbial activity in Kanebo's Example 10 shampoo. *See, e.g.*, PO Resp. 37 (concluding the discussion of the third specified index, and omitting any discussion of the fourth index).

Patent Owner appears to acknowledge that “methods for measuring the anti-dandruff efficacy of a shampoo were known in the industry prior to the '569 patent,” and that “[t]hose methods included measuring the efficacy of the anti-dandruff ingredient by determining how well it prevented the formation and growth of certain dandruff producing fungi.” PO Resp. 11 (citations omitted). A preponderance of the evidence persuades us that a desire to enhance that antifungal property would have led a person of ordinary skill in the art to use the assays, which were available at the time of the invention, to optimize for anti-microbial

activity in the shampoo of Kanebo's Example 10 and, thereby, arrive at a composition that satisfies the fourth specified index.

4. Simultaneous Optimization of the Four Index Values

We are not persuaded that the four index values, taken together, define a surprising "sweet spot" for a conditioning, anti-dandruff shampoo, which would have been unattainable without employing the specific tests and assays that are disclosed in the written description. PO Resp. 43–45; Ex. 2015 ¶¶ 71–76. On that point, Patent Owner suggests that optimizing the four beneficial properties in isolation would not have led to the claimed shampoo composition; some technique of balancing those properties against each would have been required, and would have been outside the level of ordinary skill in the art. PO Resp. 43–45.

Regarding that alleged "sweet spot," Patent Owner directs us to evidence that a shampoo formulation may meet the compositional requirements of the challenged claims, without satisfying the specified index values. *Id.* at 44 (citing Ex. 2015 ¶ 74). That fails to persuade us, however, that an ordinary artisan would have been unable to modify Kanebo's shampoo to optimize for the four beneficial shampoo properties, by taking into account known tradeoffs between those properties. On the contrary, a preponderance of the evidence establishes that a person of ordinary skill in the art would have appreciated the need for, and known how to ascertain, a balance of properties that is desirable in a conditioning, anti-dandruff shampoo formulation. Reply 2 (and citations to record therein).

In that regard, even in the 1960s, practitioners in the field recognized that the conditioning and anti-dandruff properties of a shampoo needed to be balanced against each other, and that certain "tradeoffs" were required between those properties. Reply 2; Ex 1035 ¶¶ 43–49 (and citations to the record therein). A

preponderance of the evidence persuades us that “[f]ormulating multi-attribute shampoos” had “been the norm in the industry for decades.” Ex. 1035 ¶ 12.

An ordinary artisan, at the time of the invention, would have had basic knowledge about how to balance the salient ingredients of a shampoo composition to achieve a formulation that exhibits, simultaneously, multiple excellent attributes. PO Resp. 43–45; *see* Ex. 1035 ¶¶ 11–14. Testimony and evidence generated by Patent Owner’s own witness, Dr. Lochhead, confirms that fact. Ex. 1037, 68:11–64:25; 134:8–141:19; 175:7–14; *see* Ex. 1040, 2 (report dated October, 1979, disclosing work performed by Dr. Lochhead on “[a] conditioning variant of anti-dandruff shampoo containing Zinc PTO,” designed to “simultaneously incorporate” two “conditioning agents” with the anti-dandruff ingredient). Because an ordinary artisan would have taken into account the need to balance multiple desirable shampoo properties, the task of arriving at the alleged “sweet spot” advanced by Patent Owner would have been part of the calculus of optimization, and would have led to the claimed shampoo composition. *See, e.g.*, Ex. 1035 ¶¶ 11–50 (and citations to record therein).

We are not persuaded, moreover, that the ’569 patent specification provides any guidance about how to balance the selected beneficial properties against each other. The specification of the ’569 patent provides tests and assays for individually optimizing each property (using the associated index value as a proxy) but does not reveal a technique or experimental method for balancing tradeoffs between conditioning and anti-dandruff properties. Ex. 1001, 32:34–44:42. That is potent proof that balancing the salient properties of the shampoo composition could be left to the ordinary skill of the artisan practicing in this field at the time of the invention. *See* Tr. 37:11–38:6 (when questioned whether “tweaking those four [properties] against each other” is what “sets [the] invention apart,” counsel for

Patent Owner responded that “[i]t is selecting the four indices out of all the myriad of indices” that is inventive).

In sum, Petitioner comes forward with a preponderance of evidence that, at the time of the invention, at least one test for optimizing each of the four beneficial properties, represented by the four specified index values, would have been available to a person of ordinary skill in the art. Ex. 1003 ¶¶ 17–20, 77–84. A preponderance of the evidence shows also that it would have been well within the grasp of such a person to modify Kanebo’s Example 10 shampoo to optimize for those four properties simultaneously and, thereby, attain a shampoo formulation that meets both the compositional elements and the index values specified in the challenged claims.

*5. A Preponderance of the Evidence Establishes the
Interchangeability of Certain Other Shampoo Ingredients*

Claim 10 requires a shampoo formulation that contains ethylene glycol distearate (“EGDS”) as a suspending agent. Kanebo’s Example 10 contains ethylene glycol dimyristate (“EGDM”). Ex. 1006 ¶ 37. Patent Owner acknowledges that Kanebo includes both EGDM and EGDS in a list of materials that are suitable for use as the pearl luster agent in the prior art formulation. PO Resp. 51 (citing Ex. 1006 ¶ 16). Where two known alternatives are interchangeable for a desired function, an express suggestion to substitute one for the other is not needed to render a substitution obvious. *In re Fout*, 675 F.2d 297, 301 (CCPA 1982); *In re Siebentritt*, 372 F.2d 566, 568 (CCPA 1967); *see KSR Int’l Co.*, 550 U.S. at 417 (indicating that a claim is obvious if it is no “more than the predictable use of prior art elements according to their established functions,” even without an express suggestion to combine).

A preponderance of the evidence persuades us that one would have been led to substitute EGDS for the EGDM that is used in Kanebo's Example 10. Ex. 1006 ¶ 16 (supporting a finding that those two ingredients were known, interchangeable alternative pearl luster agents). That clear disclosure, regarding the interchangeability of the two ingredients, contained within the four corners of the Kanebo reference, carries more weight with us than the contradictory testimony of Dr. Lochhead. *See* PO Resp. 51–53 (citing Ex. 2015 ¶¶ 86–87).

Similarly, claim 19 specifies guar hydroxypropyltrimonium chloride as the cationic polymer. Although Kanebo in Example 10 discloses the use of a cellulose derivative as the cationic polymer (Ex. 1006 ¶ 37), Kanebo in Example 8 discloses the interchangeability of cellulose and guar derivatives as alternative substitutes for use as the cationic polymer: In fact, Kanebo discloses in Example 8 that the exact guar derivative specified in claim 19 is interchangeable with cellulose for use as the cationic polymer in Kanebo's shampoo. Ex. 1006 ¶ 31 (Table 1 & nn.1–3, disclosing three suitable cationic polymers; two cellulose derivatives and one guar derivative—namely, “[g]uar gum hydroxypropyltrimethylammonium chloride ether”—which is a synonym for the “guar hydroxypropyltrimonium chloride” specified in claim 19); *see* Ex. 1003 ¶ 65 (supporting the interchangeability of the cationic polymers disclosed in Kanebo's Example 8, explaining that one would have recognized the interchangeability of the guar for the cellulose in Kanebo's Example 10, and explaining also that Kanebo's guar and the specified guar are synonyms). Where there is a conflict in the evidence, the clear disclosure on the face of the reference is more credible than Dr. Lochhead's contradictory testimony that those components would not have been recognized as interchangeable cationic polymers in a shampoo. PO Resp. 55–56 (citing Ex. 2015 ¶¶ 92–94).

Given the settled tenet of patent law—that no express suggestion would have been needed to prompt one to substitute a known, interchangeable alternative for another, to perform a common function—we conclude that claims 10 and 19 are shown by a preponderance of the evidence to have been obvious over Kanebo.

*6. Patent Owner's Other Arguments as to the Ground
Based on Obviousness over Kanebo Are Not Persuasive*

Patent Owner's main contention is that a conclusion of obviousness in this case requires a showing that the particular techniques and assays, set forth in the specification for assessing the four specified indices, were available at the time of the invention. *Id.* at 22. We disagree for the reasons stated above. It is sufficient that the four shampoo properties, represented by the indices, were recognized as beneficial, and that at least one test for optimizing each property was available at the time of the invention. A preponderance of the evidence demonstrates that prior art tests and assays were available, and provided a mechanism, for optimizing each of the four known, beneficial properties represented by the specified indices. Ex. 1003 ¶¶ 17–20, 76, 81–84; Ex. 1035 ¶¶ 23–42.

Petitioner argues also that an obvious variant of a prior art shampoo composition does not become patentable “by concocting new, made-up tests for assessing known properties” that were understood to be beneficial. Reply 9; *see* Tr. 81:10–82:4 (Petitioner's counsel, arguing that the specified index values are analogous to a made-up scale for evaluating ballpoint pens). For our purposes, however, it is enough to observe that the claims do not require resort to the specific tests set forth in the specification: The claims, by their inclusion of specific index values, require a shampoo that is optimized for four known beneficial properties. The specification, however, does not disclose exclusive tests by which those properties could have been optimized at the time of the invention.

Patent Owner argues that “no single reference discloses any more than two of the supposedly ‘comparable’ tests.” PO Resp. 39. That argument is not persuasive, where the sole ground taken to trial is based on obviousness, not anticipation. Dec. 18. Nor are we persuaded that, in order to prevail on the obviousness ground, Petitioner must show that a person of ordinary skill in the art would have converted the prior art assay values into the specified index values. PO Resp. 40–42. It is sufficient that a person of ordinary skill in the art would have had the desire, and the tools, to formulate a shampoo in which the four properties are optimized; an awareness of meeting the index values is not required.

Patent Owner does not show sufficiently that the claimed shampoo exhibits “superior” results—in particular, a surprising “sweet spot” of balanced properties—that would have been unexpected by one of ordinary skill in the art. *Id.* at 4, 16. Specifically, the evidence adduced at trial is insufficient to support an inference that any superior results obtained would have been truly unexpected by an ordinary artisan at the time of the invention in 1999. *See* Tr. 39:21–42:22 (citing a report prepared by Dr. Lochhead (Ex. 1040), detailing work that he performed in 1979). On the contrary, by 1999, an ordinary artisan was “concerned with balancing multiple properties, including [anti-dandruff] and conditioning” properties and, further, recognized “tradeoffs between” those properties. Ex. 1035 ¶¶ 13–15, 43–49 (and evidence cited therein). A preponderance of the evidence persuades us that one would have expected that a shampoo, optimized for four beneficial properties, would work better than a shampoo that was not optimized for those properties. *Id.* ¶¶ 10–23, 43–49 (and citations to record therein).

Patent Owner also suggests that Kanebo and the ’569 patent address different problems: Specifically, in Patent Owner’s view, Kanebo is not related sufficiently to anti-dandruff shampoo compositions. PO Resp. 49. The fact that

Kanebo discloses only “a single anti-dandruff shampoo, among many other shampoo compositions,” does not establish that Kanebo is outside the range of relevant prior art. *Id.*; see Ex. 1006 ¶ 37 (Kanebo’s Example 10).

*7. Patent Owner’s Evidence of
Secondary Considerations*

Patent Owner advances evidence of secondary considerations, which we consider in determining whether the subject matter of the challenged claims would have been obvious at the time of the invention. PO Resp. 57–60. Specifically, Patent Owner alleges that certain products, embodying the invention, have enjoyed commercial success and, further, satisfied a long-felt but unmet need in the marketplace. *Id.* We address those allegations in turn below.

*i. Patent Owner’s Evidence of
Commercial Success is Unpersuasive*

Patent Owner contends that certain of its Head & Shoulders[®] shampoo products embody the invention claimed in the ’569 patent, and that those products have enjoyed commercial success. PO Resp. 57–58 (citations omitted). Evidence of commercial success “is only significant if there is a nexus between the claimed invention and the commercial success.” *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1311–12 (Fed. Cir. 2006). To establish a proper nexus between a claimed invention and the commercial success of a product, a patent owner must offer “proof that the sales [of the allegedly successful product] were a direct result of the unique characteristics of the claimed invention—as opposed to other economic and commercial factors unrelated to the quality of the patented subject matter.” *In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996).

In other words, “if the commercial success is due to an unclaimed feature of the” invention, or “if the feature that creates the commercial success was known in

the prior art, the success is not pertinent.” *Ormco*, 463 F.3d at 1312; *see also In re Huai-Hung Kao*, 639 F.3d 1057, 1070 (Fed. Cir. 2011) (requiring a determination of “whether the commercial success of the embodying product resulted from the merits of the claimed invention as opposed to the prior art or other extrinsic factors”). We, thus, turn to whether Patent Owner establishes sufficiently a nexus between the invention of the challenged claims and the Head & Shoulders[®] shampoo products.

On that point, Patent Owner avers, without further elaboration, that the Head & Shoulders[®] shampoo products “embody the claims of the ’569 patent” and, further, “is due to the claimed features of the ’569 patent.” PO Resp. 58 (citing Ex. 2015 ¶ 98). The evidence upon which Patent Owner relies, but does not discuss in any detail in its brief, consists of a single sentence in the declaration of Dr. Lochhead: “Based on my training and nearly 40 years of experience, it is my opinion that the commercial success of [Patent Owner’s] Head & Shoulders[®] products that embody the claims of the ’569 patent is due to the claimed features of the ’569 patent, which represent the consumer desired properties of the superior combination of the anti-dandruff efficacy and conditioning performance.” Ex. 2015 ¶ 98.

We are not persuaded that Dr. Lochhead’s “training and nearly 40 years of experience” relate sufficiently to shampoo formulations; therefore, we find his testimony on that point is entitled to little weight. *See supra* notes 2, 5. Patent Owner has not established sufficiently a nexus between the claimed invention and the alleged commercial success of the Head & Shoulders[®] shampoo products.

In particular, Patent Owner argues that the success of those products “is due to the claimed features of the ’569 patent,” but does not explain adequately how the Head & Shoulders[®] products allegedly embody the challenged claims; nor does

Patent Owner explain in any detail why it was the unique characteristics of the claimed shampoo composition that drove sales. PO Resp. 57–58. In that regard, we limit our review to evidence actually discussed in Patent Owner’s Response. We will not play archeologist with the record to discover evidentiary support for bare attorney argument made in such a response. *Id.* We decline to consider, moreover, information presented in a supporting declaration, but not discussed sufficiently in Patent Owner’s Response. *See id.* (citing Ex. 2018 and 2021, without a pin-cite or any discussion of that evidence). Among other reasons, doing so would permit the use of declarations to circumvent our rules relating to page limits. In that regard, our rules prohibit a party from incorporating by reference from one document (such as a supporting declaration) into another document (such as Patent Owner’s Response). *See* 37 C.F.R. § 42.6(a)(3).

Any commercial success enjoyed by the Head & Shoulders[®] line of shampoo products is relevant only if the challenged claims are shown to embody those products. Patent Owner has not made out that critical showing. *See In re DBC*, 545 F.3d 1373, 1384 (Fed. Cir. 2008) (finding no nexus, absent evidence that “the driving force behind [the allegedly successful product’s sales] was the *claimed* combination”) (emphasis added); *Ormco*, 463 F.3d at 1311–12 (requiring a “nexus between the *claimed* invention and the commercial success”) (emphasis added); *Huang*, 100 F.3d at 140 (requiring proof that sales were a “direct result of the unique characteristics of the *claimed* invention”) (emphasis added).

In the alternative, Patent Owner’s evidence of commercial success does not outweigh the strong showing of obviousness made out by Petitioner in view of Kanebo. *See Sud-Chemie, Inc. v. Multisorb Techs., Inc.*, 554 F.3d 1001, 1009 (Fed. Cir. 2009) (“evidence of unexpected results and other secondary considerations will not necessarily overcome a strong prima facie showing of

obviousness”). Accordingly, the alleged commercial success of certain Head & Shoulders[®] shampoo products does not support a conclusion of nonobviousness of the challenged claims in this case.

*ii. Patent Owner’s Evidence of
Long-Felt Need is Similarly Unpersuasive*

Patent Owner contends that certain of its Head & Shoulders[®] shampoo products, alleged to embody the invention of the challenged claims, also satisfy a long-felt but unmet need in the marketplace. PO Resp. 59–60. That contention suffers the same defect as the one relating to commercial success; that is, Patent Owner does not show sufficiently that the Head & Shoulders[®] shampoo products embody, in fact, the invention of the challenged claims.

Nor are we persuaded, based on the argument provided in the two pages devoted to the issue in Patent Owner’s Response (PO Resp. 59–60), that any evidence of long-felt need “demonstrates both that a demand existed for the patented invention, and that others tried but failed to satisfy that demand.” *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1082 (Fed. Cir. 2012). Accordingly, Patent Owner fails to persuade us that the claimed invention satisfied a long-felt, but unmet need, among consumers.

In sum, Patent Owner’s evidence of secondary considerations does not “overcome [the] strong [] showing of obviousness” made by Petitioner in this case. *See Sud-Chemie, Inc.*, 554 F.3d at 1009.

C. Motions to Exclude

The party moving to exclude evidence bears the burden of proving that it is entitled to the relief requested—namely, that the material sought to be excluded is inadmissible under the Federal Rules of Evidence. *See* 37 C.F.R. §§ 42.20(c), 42.62(a).

1. Petitioner's Motion to Exclude

Petitioner moves to exclude certain evidence relating to Patent Owner's assertions of commercial success, and long-felt but unmet need, in the marketplace. Pet. Mot. Ex. 1–15. To the extent that such evidence was not discussed adequately, if at all, in Patent Owner's Response, it does not form the basis for our conclusions regarding secondary considerations. To the extent that the evidence sought to be excluded was, in fact, discussed adequately in Patent Owner's Response, we need not reach the merits of Petitioner's Motion to Exclude Evidence. That is because, as explained above, even if the disputed evidence is considered, Patent Owner has not shown proof of secondary considerations that would support a conclusion of nonobviousness of the challenged claims

Accordingly, Petitioner's Motion to Exclude Evidence is dismissed as moot.

2. Patent Owner's Motion to Exclude

Patent Owner seeks to exclude evidence that, in Patent Owner's view, violates our rule against incorporation by reference, exceeds the permissible scope of reply or rebuttal evidence, and raises new issues or belatedly presents evidence. PO Mot. Ex. 1; *see generally id.* at 1–8. To the extent that any such violations have occurred, we decline to consider such evidence in reaching our decision.

A motion to exclude, however, is not an appropriate vehicle for challenging a reply, or a reply's supporting evidence, as exceeding the scope of a proper reply. *Liberty Mutual Ins. Co. v. Progressive Casualty Ins. Co.*, Case CBM2012-00002, slip op. at 62 (PTAB Jan. 23, 2014) (Paper 66); *Norman Int'l, Inc. v. Andrew Toti Testamentary Trust*, Case IPR2014-00283, slip op. at 2 (PTAB Jan. 22, 2015) (Paper 33). The purpose of a motion to exclude is to challenge

admissibility of evidence. *See* Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,767 (Aug. 14, 2012); Paper 41, 1–2.

Patent Owner objects to Dr. Nandagiri’s testimony to the extent that it opines about patent law or procedure, as opposed to his scientific or technical knowledge. PO Mot. Ex. 8–9. That objection goes to the weight, and not the admissibility, of the evidence. We accord Dr. Nandagiri’s testimony the weight to which it is entitled.

We have considered, but find unpersuasive, Patent Owner’s additional arguments as to the authenticity of Exhibit 1040. PO Mot. Ex. 10–11. Exhibit 1040 was drafted by Patent Owner’s own witness, and we are persuaded that it is authentic, where “Dr. Lochhead testified that he did not know of any reason to think that Exhibit 1040 was in any way fabricated or altered from the way he originally wrote it.” PO Mot. Ex. Resp. 11; Ex. 1037, 60:16–21.

We have fully considered the positions of the parties relating to the remaining evidentiary issues. *See generally* PO Mot. Ex.; PO Mot. Ex. Resp.; PO Mot. Ex. Reply. For reasons stated by Petitioner, we decline to exclude evidence in this proceeding. PO Mot. Ex. Resp. 1–15.

Accordingly, Patent Owner’s Motion to Exclude Evidence is denied.

III. CONCLUSION

Petitioner has demonstrated, by a preponderance of the evidence, that claims 1–12, 15, 17–19, 23, 26, 28–30, and 32 of the ’569 patent are unpatentable over Kanebo under 35 U.S.C. § 103.

IV. ORDER

It is

ORDERED that claims 1–12, 15, 17–19, 23, 26, 28–30, and 32 of the '569 patent are *unpatentable*;

FURTHER ORDERED that Petitioner's Motion to Exclude Evidence is *dismissed*;

FURTHER ORDERED that Patent Owner's Motion to Exclude Evidence is *denied*; and

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

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