UNITED STATES PATENT AND TRADEMARK OFFICE

_____

BEFORE THE PATENT TRIAL AND APPEAL BOARD

_____

DR. SQUATCH LLC

Petitioner

v.

The Procter & Gamble Company

Patent Owner

Patent No. 11,844,752

DECLARATION OF BOZENA B. MICHNIAK-KOHN, PHD

PETITIONER DR. SQUATCH
EX. 1002

TABLE OF CONTENTS

I. ENGAGEMENT AND COMPENSATION 7
II. QUALIFICATIONS 7
III. SUMMARY OF OPINIONS 10
IV. MATERIALS REVIEWED 11
V. UNDERSTANDING OF THE RELEVANT LAW 17
A. Obviousness 17
VI. LEVEL OF ORDINARY SKILL IN THE ART 20
VII. RELEVANT TIMEFRAME FOR DETERMINING OBVIOUSNESS 21
VIII. TECHNICAL INTRODUCTION 23
A. Background of the Technology 23
1. Deodorants vs. Antiperspirants 23
2. Basics of Deodorants 24
a. Types of Deodorants 24
b. Components of Anhydrous Stick Compositions 25
i. Carrier Oils 25
ii. Structurants 26
iii. Fragrances 28
iv. Antimicrobials 28
c. Hardness of Anhydrous Stick Compositions 29
3. The Move to Natural Deodorants 31
a. Aluminum-Free 31
b. Silicone-free 33
c. Natural Antimicrobials 34
d. Natural Fragrances 34
B. The '752 Patent Disclosure 35
IX. GROUND 1: Claims 1-13 are Obvious over Lesniak in view of Bianchi '254 37

PETITIONER DR. SQUATCH
EX. 1002

A. Overview 37
B. Rationale (Motivation) Supporting Obviousness 39
C. Reasonable Expectation of Success 40
D. Analogous Art 41
E. Claim Mapping 42
CLAIM 1 42
CLAIM 2 47
CLAIM 3 47
CLAIM 4 48
CLAIM 5 48
CLAIM 6 49
CLAIM 7 49
CLAIM 8 50
CLAIM 9 50
CLAIM 10 51
CLAIM 11 51
CLAIM 12 51
CLAIM 13 51
X. GROUND 2: Claim 14 is Obvious Over Lesniak in view of Bianchi '254 and Phinney 52
A. Overview of the Combination 52
B. Rationale (Motivation) Supporting Obviousness 53
C. Reasonable Expectation of Success 53
D. Analogous Art 54
E. Claim Mapping 55
CLAIM 14 55
XI. GROUND 3: Claims 15-16 and 18-19 are Obvious Over Lesniak in View of Phinney, Bianchi '254, and Anconi 56
A. Overview of the Combination 56

PETITIONER DR. SQUATCH
EX. 1002

B. Rationale (Motivation) Supporting Obviousness 57
C. Reasonable Expectation of Success 58
D. Analogous Art 59
E. Claim Mapping 59
CLAIM 15 59
CLAIM 16 62
CLAIM 18 63
CLAIM 19 64
XII. GROUND 4: Claim 17 is Obvious Over Lesniak in View of Phinney, Bianchi '254, Anconi, and Easy Homemade 65
A. Overview of the Combination 65
B. Rationale (Motivation) Supporting Obviousness 66
C. Reasonable Expectation of Success 67
D. Analogous Art 68
E. Claim Mapping 68
CLAIM 17 68
XIII. GROUND 5: Claims 1, 4-14 are Obvious Over Native in view of Bianchi '254 69
A. Overview of the Combination 69
B. Rationale (Motivation) Supporting Obviousness 70
C. Reasonable Expectation of Success 71
D. Analogous Art 72
E. Claim Mapping 72
CLAIM 1 72
CLAIM 4 78
CLAIM 5 78
CLAIM 6 80
CLAIM 7 80
CLAIM 8 81

CLAIM 9 81
CLAIM 10 84
CLAIM 11 84
CLAIM 12 84
CLAIM 13 84
CLAIM 14 85
XIV. GROUND 6: Claims 2-3 are Obvious Over Native in view of Bianchi '254 and Easy Homemade 85
A. Overview of the Combination 85
B. Rationale (Motivation) Supporting Obviousness 87
C. Reasonable Expectation of Success 88
D. Analogous Art 88
E. Claim Mapping 89
CLAIM 2 89
CLAIM 3 89
XV. GROUND 7: Claims 15 and 17-19 are Obvious Over Native in view of Bianchi '254, Easy Homemade, Anconi, and Stoia 90
A. Overview of the Combination 90
B. Rationale (Motivation) Supporting Obviousness 90
C. Reasonable Expectation of Success 91
D. Analogous Art 92
CLAIM 15 93
CLAIM 17 96
CLAIM 18 96
CLAIM 19 97
XVI. GROUND 8: Claim 16 is Obvious Over Native in View of Bianchi '254, Easy Homemade, Anconi, Stoia, and Millet 99
A. Overview of the Combination 99
B. Rationale (Motivation) Supporting Obviousness 99
C. Reasonable Expectation of Success 100

PETITIONER DR. SQUATCH
EX. 1002

D. Analogous Art 101
E. Claim Mapping 101
CLAIM 16 101
XVII. GROUND 9: Claims 15-19 are Obvious Over Squatch in View of Sturgis 102
A. Overview of the Combination 102
B. Rationale (Motivation) Supporting Obviousness 103
C. Reasonable Expectation of Success 104
D. Analogous Art 104
E. Claim Mapping 105
CLAIM 15 105
CLAIM 16 110
CLAIM 17 110
CLAIM 18 110
CLAIM 19 112
XVIII. SECONDARY CONSIDERATIONS 113
XIX. OATH 113

PETITIONER DR. SQUATCH
EX. 1002

I. ENGAGEMENT AND COMPENSATION

1. My name is Bozena B. Michniak-Kohn. I have been retained by counsel for Dr. Squatch for the purpose of providing my opinion with respect to the unpatentability of U.S. Patent No. 11,844,752 ("the '752 Patent"). I am being compensated for my time in preparing this declaration at my standard hourly rate, and my compensation is not dependent upon my opinions or the outcome of the proceedings.

II. QUALIFICATIONS

2. My qualifications and credentials are fully set forth in my curriculum vitae, attached as Ex. 1048. I am an expert in the field of formulating compositions for topical application, including pharmaceutical and cosmetic compositions. Over the past 40 years, I have accumulated significant experience designing and testing novel formulations for topical and transdermal delivery systems, creams, gels, emulsions, and micro- and nano-carrier systems. Past work has also included formulation and investigations of mechanisms of action of antiperspirants and deodorants.

3. I received a B.S. in Pharmacy from DeMontfort University, Leicester, England, in 1977. I received my Ph.D. in Pharmacology from DeMontfort University in 1980. I held Postdoctoral Fellowships at the University of Florida's College of Pharmacy from 1981-1983, and at the University of Bradford's

PETITIONER DR. SQUATCH
EX. 1002

Postgraduate School of Studies in Pharmacy from 1983-1986. I am a member of the Royal Pharmaceutical Society of Great Britain (license #73637.)

4. I was an Assistant Professor in the Department of Basic Pharmaceutical Sciences-Pharmaceutics (tenure-track) at the University of South Carolina's College of Pharmacy from 1987-1993, an Associate Professor from 1993-1998, and Full Professor with tenure from 1998-2000. From 2000-2005, I was an Associate Professor in the Department of Physiology and Pharmacology at the University of Medicine and Dentistry of New Jersey- NJ Medical School. I then moved to Rutgers-The State University of New Jersey (Busch Campus), where I am now a tenured Professor in Pharmaceutics.

5. Since 2000, I have acted as the Director of the Laboratory for Drug Delivery and in 2011, I founded the Center for Dermal Research (CDR) at Rutgers and continue to act as its Director. I am currently a member of the Editorial Boards of several peer-reviewed journals including Pharmaceutics (MDPI), the Clinical Dermatology Research Journal (SciTechnol), Research and Reports in Transdermal Drug Discovery (Dove Medical Press, Ltd.), Journal of Drug Research and Development (Sciforshen), and the Journal of Drug Discovery (Hindawi Publishing Company).

6. I have been elected Fellow at the American Association of Pharmaceutical Scientists (AAPS) and the Royal Society of Chemistry. I have also

PETITIONER DR. SQUATCH
EX. 1002

been awarded the title of Doctor of Science (D.Sc.) by the Poznan University of Medical Sciences (PUMS) in Poznan, Poland for outstanding contributions to the field of pharmaceutical sciences in July 2023. I have also organized numerous industry events and conferences.

7. I have published hundreds of peer-reviewed articles, book chapters, and abstracts related to the field of field of formulating compositions for topical application, including publications on antiperspirants and deodorants. I have also been invited to speak about this field at numerous academic and industry conferences.

8. Since starting my academic career, I have undertaken numerous funded projects within the cosmetic and pharmaceutical industries. This includes work on antiperspirant and deodorant mechanisms of action, as well as, among other things, the creation of novel sweat gland models for antiperspirant formulation testing.

9. In view of my experiences and expertise outlined above and provided in my CV, I am an expert in the field of formulating compositions for topical application. For this reason, I am qualified to provide an opinion as to what a person of ordinary skill in the art ("POSA") would have understood, known, or concluded as of June 30, 2017, March 23, 2018, and/or December 17, 2020.

PETITIONER DR. SQUATCH
EX. 1002

III. SUMMARY OF OPINIONS

10. In my opinion, a POSA would have found:

(1) U.S. Patent No. 11,433,018 ("Lesniak") renders obvious claims 1-13 in view of U.S. Patent App. Pub. No. 2007/166254 ("Bianchi '254");

(2) Lesniak renders obvious claim 14 in view of Bianchi '254, and U.S. Patent No. 9,314,412 ("Phinney");

(3) Lesniak renders obvious claims 15-16, 18-19 in view of Bianchi '254, Phinney, and U.S. Patent App. Pub. No. 2016/0089321 ("Anconi");

(4) Lesniak renders obvious claim 17 in view of Bianchi '254, Phinney, Anconi, and the Easy Homemade deodorant website ("Easy Homemade");

(5) the Native deodorant website ("Native") renders obvious claims 1, 4-14 in view of Bianchi '254;

(6) Native renders obvious claims 2-3 in view of Bianchi '254 and Easy Homemade;

(7) Native renders obvious claims 15, 17-19 in view of Bianchi '254, Easy Homemade, Anconi, and Mihaela Stoia, et al., *Selected Evidence-Based Health Benefits of Topically Applied Sunflower Oil*, 10(1) APPLIED SCI. REPS. 45-49 (2015) ("Stoia");

PETITIONER DR. SQUATCH
EX. 1002

(8) Native renders obvious claim 16 in view of Bianchi '254, Easy Homemade, Anconi, Stoia, and U.S. Patent App. Pub. No. 2018/0168954 ("Millet");

(9) the Dr. Squatch website ("Squatch") renders obvious claims 15-19 in view of U.S. Patent Pub. App. Pub. No. 2019/0000734 ("Sturgis").

IV. MATERIALS REVIEWED

11. In forming my opinions, I have relied on my knowledge of the field, and have specifically reviewed the following exhibits:

Exhibit No.	Description
1001	U.S. Patent No. 11,844,752 ("the '752 Patent")
1003	U.S. Patent No. 11,433,018 ("Lesniak")
1004	U.S. Patent No. 9,314,412 ("Phinney")
1005	John H. Lamb, *Sodium Bicarbonate: An Excellent Deodorant*, 7(3) J. INVESTIGATIVE DERMATOLOGY 131-33 (1946) ("Lamb")
1006	U.S. Patent No. 6,048,518 ("Bianchi '518")
1007	Native Wayback Machine archives, captured May 26, 2016, November 23, 2016, November 1, 2015 respectively for: https:/www.nativecos.com https://www.nativecos.com/product/deodorant/ https:/www.nativecos.com ("Native")

PETITIONER DR. SQUATCH
EX. 1002

1008	U.S. Patent App. Pub. No. 2007/0166254 ("Bianchi '254")
1009	Wayback Machine archive, captured January 26, 2017, for http:/soapdelinews.com/2016/11/easy-homemade-deodorant-recipe.html ("Easy Homemade")
1010	Angelica Peebles, *P&G Has Acquired Native Natural Deodorant Brand*, CNBC (Nov. 15, 2017, 5:34 P.M.), https://www.cnbc.com/2017/11/15/pg-has-acquired-native-natural-deodorant-brand.html (last visited May 28, 2024)
1011	Rachel Lapidos, *P&G Has Acquired Cult-Fave Deodorant Brand Native*, WELL+GOOD (Nov. 17, 2017), https://www.wellandgood.com/pg-acquired-natural-deodorant-brand-native/ (last visited May 29, 2024)
1012	Alex Bitter, *P&G Buys Deodorant Brand Native for Undisclosed Sum*, S&P GLOBAL (Nov. 15, 2017, 5:31 PM) https://www.spglobal.com/marketintelligence/en/news-insights/trending/DWXgoreaSsTDRfJ0RDSMEg2 (last visited May 29, 2024)
1013	KARL LADEN ET AL., ANTIPERSPIRANTS AND DEODORANTS (Karl Laden ed., 2nd ed. 1999)
1014	U.S. Patent App. Pub. No. 2005/0142085
1015	English Translation of Int'l Patent App. Pub. No. WO 2012/098189
1016	SoapDeliNews Wayback Machine archive, captured April 17, 2013, for https:/soapdelinews.com/2013/03/natural-handmade-lavender-patchouli-deodorant-recipe-with-printable-labels.html
1017	SoapDeliNews Wayback Machine archive, captured July 23, 2016, for http:/soapdelinews.com/2016/07/natural-neem-oil-deodorant-recipe.html
1018	SoapDeliNews Wayback Machine archive, captured October 19, 2012, for http:/soapdelinews.com/2012/10/diy-natural-homemade-deodorant-recipe.html
1019	LORRAINE WHITE, HOMEMADE DEODORANT 32 EASY TO MAKE ALL NATURAL & ORGANIC DEODORANT & BODY SPRAY RECIPES (2014)

PETITIONER DR. SQUATCH
EX. 1002

1020	*Homemade Deodorant*, THE CRUNCHY URBANITE (Nov. 24, 2013) https://thecrunchyurbanite.com/2013/11/24/homemade-deodorant/ (last visited May 29, 2024)
1021	Piyatip Khuntayaporn & Jiraphong Suksiriworapong, *Efficacy of Essential Oil Formulations Against Malodor Causing Bacteria*, 44(4) PHARM. SCIS. ASIA 209-16 (2017)
1022	Laura G. Corral, et al., *A Research Note Antimicrobial Activity of Sodium Bicarbonate*, 53(3) J. FOOD SCI. 981-82 (1988)
1023	Pamela Emanoil, *Customers Itching for Personal Care Alternatives*, Apr. 2006 NAT. FOODS MERCHANDISER 40-42 (2006)
1024	Mohammed A. Shahtalebi et al., *Deodorant Effects of a Sage Extract Stick: Antibacterial Activity and Sensory Evaluation of Axillary Deodorancy*, 18(10) J. RSCH. MED. SCI. 833-39 (2013)
1025	U.S. Patent No. 5,585,092
1026	U.S. Patent No. 9,610,237
1027	U.S. Patent App. Pub. No. 2014/0199252
1028	James Lambert, *Silicone Safety and the Cosmetic Industry*, 126(11) *Cosms. & Toiletries* 810-15 (2011)
1029	Julia Pasquet et al., *The Contribution of Zinc Ions to the Antimicrobial Activity of Zinc Oxide*, 457 COLLOIDS & SURFACES: PHYSICOCHEMICAL & ENG'G ASPECTS 263-74 (2014)
1030	Rodrigo Carvalho, *Hydroxyisohexyl 3-Cyclohexene Carboxaldehyde (Lyral®) as Allergen: Experience from a Contact Dermatitis Unit*, 30(3) CUTANEOUS & OCULAR TOXICOLOGY 249-50 (2011)
1031	Maria V. Heisterberg, et al., *Deodorants are the Leading Cause of Allergic Contact Dermatitis to Fragrance Ingredients*, 64 CONTACT DERMATITIS 258-64 (2011)
1032	J. Handley & D. Burrows, *Allergic Contact Dermatitis from the Synthetic Fragrances Lyral and Acetyl Cedrene in Separate Underarm Deodorant Preparations*, 31 CONTACT DERMATITIS 288-90 (1994)

PETITIONER DR. SQUATCH
EX. 1002

1033	Prosecution History Excerpts of U.S. Patent Application No. 17/979,822 ('752 file history)
1034	Prosecution History Excerpts of U.S. Patent Application No. 17/961,089
1035	Prosecution History Excerpts of U.S. Provisional Patent Application No. 62/527,180
1036	Schueller, R., & Romanowski, P., Multifunctional cosmetics (2003)
1037	Siquet, F., & Devleeschouwer, M. J., Antibacterial agents and preservatives, Handbook of Cosmetic Science and Technology (2009)
1038	Fed. Reg. Vol. 60, No. 176 (Sept. 12, 1995)
1039	Reserved
1040	Reserved
1041	U.S. Patent No. 4,049,792
1042	JOHN A. DEAN, LANGE'S HANDBOOK OF CHEMISTRY (John A. Dean ed., 15th ed. 1999)
1043	U.S. Patent No. 4,919,934
1044	U.S. Patent App. Pub. No. 2018/0168954 ("Millet")
1045	Reserved
1046	21 C.F.R. § 720.4(d) (1992)

PETITIONER DR. SQUATCH
EX. 1002

1047	U.S. Patent No. 6,123,932
1048	Curriculum Vitae of Bozena B. Michniak-Kohn, Ph.D.
1049	Int'l Patent App. Pub. No. WO 2012/098189
1050	SAMUEL P. SADTLER ET AL., A TEXT-BOOK OF CHEMISTRY INTENDED FOR THE USE OF PHARMACEUTICAL AND MEDICAL STUDENTS (5th ed. 1918)
1051	Reserved
1052	Reserved
1053	Reserved
1054	U.S. Patent No. 5,976,514
1055	U.S. Patent No. 5,429,816
1056	Reserved
1057	U.S. Patent App. Pub. No. 2016/0089321 ("Anconi")
1058	Mihaela Stoia, et al., *Selected Evidence-Based Health Benefits of Topically Applied Sunflower Oil*, 10(1) APPLIED SCI. REPS. 45-49 (2015) ("Stoia")
1059	Declaration of Vinod Stephen Pinto ("Squatch")
1060	U.S. Patent App. Pub. No. 2008/0287377

PETITIONER DR. SQUATCH
EX. 1002

1061	Reserved
1062	Reserved
1063	Reserved
1064	Reserved
1065	Reserved
1066	Reserved
1067	Reserved
1068	S.A. Navale, et al., *Effect of Flour Composition (Arrowroot, Lesser Yam and Potato) on its Nutritional and Functional Properties*, 42(1) J. ROOT CROPS 61-73 (2016)
1069	IFSCC Monograph Number 6, Antiperspirants and Deodorants: Principles of Underarm Technology (1998)
1070	M. Abendrot et al., *Zinc-containing Compounds for Personal Care Applications*, 40 INT'L J. COSMETIC SCI. 319-27 (2018)
1071	JANE ANISTON, HOMEMADE DEODORANT, A COMPLETE BEGINNER'S GUIDE TO NATURAL DIY DEODORANTS YOU CAN MAKE TODAY (2015)
1072	EP0471392
1073	U.S. Patent App. Pub. No. 2019/0000747 ("Sturgis")
1074	U.S. Patent No. 11,540,999

PETITIONER DR. SQUATCH
EX. 1002

1075	U.S. Patent No. 11,497,706
1076	Additional Prosecution History Excerpts of U.S. Patent Application No. 17/961,089

V. UNDERSTANDING OF THE RELEVANT LAW

12. I have the following understanding of the applicable law.

A. Obviousness

13. I understand that a claim in an issued patent can be unpatentable if it is obvious. Obviousness does not require that every element of the claim be in a single prior art reference. Instead, it is possible for claim elements to be described (or suggested) in different prior art references, so long as there is motivation or sufficient reasoning to combine the references, and a reasonable expectation of success in achieving what is set forth in the claims.

14. I understand that a claim is unpatentable for obviousness if the differences between the claimed subject matter and the prior art are such that the subject matter as a whole would have been obvious at the time the alleged invention was made to a POSA to which said subject matter pertains.

15. I understand, therefore, that when evaluating obviousness, one must consider obviousness of the claim "as a whole." This consideration must be from the perspective of the person of ordinary skill in the relevant art, and that such perspective must be considered as of the time the alleged invention was made.

PETITIONER DR. SQUATCH
EX. 1002

16. The level of ordinary skill in the art is discussed in ¶¶ 26-28 below.

17. The relevant time frame for obviousness, the time the alleged invention was made, is discussed in ¶¶ 29-32 below.

18. I understand that in considering the obviousness of a claim, one must consider four things. These include the scope and content of the prior art, the level of ordinary skill in the art at the relevant time, the differences between the prior art and the claim, and any "secondary considerations."

19. I understand that "secondary considerations" include real-world evidence that can tend to make a conclusion of obviousness either more probable or less probable. For example, the commercial success of a product embodying a claim of the patent could provide evidence tending to show that the claimed invention is not obvious. In order to understand the strength of the evidence, one would want to know whether the commercial success is traceable to a certain aspect of the claim not disclosed in a single prior art reference (*i.e.*, whether there is a causal "nexus" to the claim language). One would also want to know how the market reacted to disclosure of the invention, and whether commercial success might be traceable to things other than innovation, for example, the market power of the seller, an advertising campaign, or the existence of a complex system having many features beyond the claims that might be desirable to a consumer. One would also want to know how the product compared to similar products not embodying the claim. I

PETITIONER DR. SQUATCH
EX. 1002

understand that commercial success evidence should be reasonably commensurate with the scope of the claim, but that it is not necessary for a commercial product to embody the full scope of the claim.

20. Other kinds of secondary considerations are possible. For example, evidence that the relevant field had a long-established, unsolved problem or need that was later provided by the claimed invention could be indicative of non-obviousness. Evidence that others had tried, but failed to make an aspect of the claim might indicate that the art lacked the requisite skill to do so. Evidence of copying of the patent owner's products before the patent was published might also indicate that its approach to solving a particular problem was not obvious. Evidence that the art recognized the value of products embodying a claim, for example, by praising the named inventors' work, might tend to show that the claim was non-obvious.

21. I further understand that prior art references can be combined where there is an express or implied rationale to do so. Such a rationale might include an expected advantage to be obtained, or might be implied under the circumstances. For example, a claim is likely obvious if design needs or market pressures existing in the prior art make it natural for one or more known components to be combined, where each component continues to function in the expected manner when combined (*i.e.*, when there are no unpredictable results).

PETITIONER DR. SQUATCH
EX. 1002

22. I understand that when evaluating a motivation to combine, it is not necessary to show that a combination is the best option, only that it be a suitable option, and that a given course of action with simultaneous advantages and disadvantages does not necessarily obviate any motivation to combine.

23. I understand that when considering obviousness, one can refer to portions of the specification admitted to being prior art, including the "BACKGROUND" section. Furthermore, a lack of discussion in the patent specification concerning how to implement a disclosed technique can support an inference that the ability to implement the technique was within the ordinary skill in the prior art.

24. In addition, I understand that a reference need not state a feature's absence in order to disclose a negative limitation.

25. Finally, I understand that when a claimed range overlaps with the range in the prior art, this may render the claim obvious, notwithstanding differences in the ranges, unless there was something unexpected or critical about the claimed range. I understand that such unexpected results must differ in kind and not merely in degree from the results in the prior art to render the claim patentable where the ranges overlap.

VI. LEVEL OF ORDINARY SKILL IN THE ART

26. In my opinion, the relevant art was that of formulating cosmetics.

PETITIONER DR. SQUATCH
EX. 1002

27. In my opinion, the level of ordinary skill encompassed a person with at least a bachelor's degree in chemistry, pharmacy/pharmaceutical sciences, chemical engineering, materials science or a comparable field, with 2-3 years' experience in formulating cosmetics, pharmaceuticals, or other comparable products, or similarly relevant industry experience, with relevant experience substituting for education and vice versa.

28. Given my experience in the field, I am familiar with the knowledge that a POSA would have had at the time and the manner in which such a person would have viewed the available information at the time. My testimony is offered from this perspective, even if it does not specifically refer to the perspective of a POSA in every instance.

VII. RELEVANT TIMEFRAME FOR DETERMINING OBVIOUSNESS

29. I understand that obviousness must be evaluated at the time right before the invention. From the cover pages of the '752 Patent, I can see that it claims priority to June, 30, 2017, the filing date of Provisional Application No. 62/527,180, and March 23, 2018, the filing date of Provisional Application No. 62/647,104. I have reviewed Provisional Application No. 62/527,180 and found no disclosure of a deodorant stick composition (i) comprising ranges of liquid triglyceride that begin at about 25% or (ii) having a hardness of from about 80 mm*10 to about 140 mm*10 as measured with an ASTM D-1321 needle. I understand that the application's

PETITIONER DR. SQUATCH
EX. 1002

failure to describe those features means that the ’752 Patent cannot claim priority to a date earlier than March 23, 2018. Nevertheless, the references in Grounds 1-8 below are prior art regardless of which priority date is used.

30. In addition (concerning Ground 9), claims 15-19 are not entitled to a priority date before the November 3, 2022 filing date of the ’752 Patent. Those claims require specific combinations of eight ingredients. But the specification of U.S. Patent Application No. 17/194,437 (“the ’437 Application”) to which the ’752 Patent claims priority does not provide written description support for those combinations, and instead discloses the ingredients separately in large lists of possible ingredients (e.g., structurants, antimicrobials, etc.). I understand that the ’437 Application’s failure to provide sufficient “blaze marks” that indicate or direct one to the claimed ingredient combinations of claims 15-19 over the vast number of alternative combinations means that those claims cannot have a priority date earlier than November 3, 2022, which I will use as the date of the invention for those claims for purposes of my analysis in Ground 9.

31. As set forth below, the art discussed herein came before the relevant priority dates.

32. In particular, Lesniak was filed on June 18, 2015 (PCT/US2015/036498); Phinney issued on April 19, 2016; Bianchi ’254 published on July 19, 2007; Anconi published on March 31, 2016; Easy Homemade published

PETITIONER DR. SQUATCH
EX. 1002

by January 26, 2017; Native published by November 23, 2016; Stoia published in 2015; Millet was filed on May 10, 2016; Squatch published by November 13, 2020; and Sturgis published on January 3, 2019.

VIII. TECHNICAL INTRODUCTION

A. Background of the Technology

1. Deodorants vs. Antiperspirants

33. Deodorants form a category of cosmetic products that were developed to mask and/or counteract the buildup of unwanted human body odor. Ex. 1013, 169-83, 189-95. Deodorants typically contain antimicrobials and/or fragrances to inhibit the formation and perception of malodor. *Id.*, 201. As discussed further below, fragrances were known to mask or overpower malodor with a more pleasant aroma, while antimicrobials were known to limit the growth of bacteria responsible for production of malodorous compounds. *Id.*, 171-83, 194-201, 250-51.

34. Antiperspirants are generally considered a subcategory of deodorants. Like deodorants, they were known to contain fragrances and/or antimicrobials, but they also included additional active ingredients that may reversibly occlude sweat pores in the skin. Ex. 1006, 3:5-11; Ex. 1014, ¶¶ [0020]-[0026] ("[A]ntiperspirant actives include astringent metallic salts, particularly inorganic and organic salts of aluminum, zirconium, and zinc, as well as mixtures thereof."); Ex. 1003, 3:39-4:21, 8:46-48, 10:27 (describing zinc-based antiperspirant compositions); Ex. 1015, 5; Ex.

PETITIONER DR. SQUATCH
EX. 1002

1049, 3-4; Ex. 1008, ¶ [0064] ("[A]ntiperspirant stick compositions of this invention further comprise one or more additional optional components selected from the group consisting of . . . fragrances [and] preservatives."); Ex. 1013, 73, 215. The occlusion of sweat pores was known to reduce moisture and nutrients from glandular secretion, and ultimately curb the bacterial growth and metabolism responsible for malodorous compounds. Ex. 1013, 73.

2. Basics of Deodorants

a. Types of Deodorants

35. The first commercial deodorant product specifically for underarm use launched in 1888. Ex. 1013, 1-2, 170. Over the years, the deodorant category expanded into a wide range of new packaging forms and formulation types. *Id.*, 1-2. Examples of different deodorant products include, e.g., aerosols, pump sprays, creams, roll-ons, and sticks. *Id.* Deodorant sticks are a popular form introduced in the 1950s. *Id.*, 9. Early deodorant sticks were glycol gels (containing water) dispensed in an oval swivel-up container that allowed for easy application. *Id.* Anhydrous sticks, packaged in containers resembling those used for the original glycol gel sticks, were subsequently developed. *Id.*, 13; *see generally* Ex. 1014.

36. By the time of the purported invention, it was understood that anhydrous stick compositions were versatile and could be utilized in the development of either antiperspirants or deodorants products. Ex. 1014, ¶ [0008].

PETITIONER DR. SQUATCH
EX. 1002

b. Components of Anhydrous Stick Compositions

37. While anhydrous stick compositions were known to contain a wide range of ingredients, they typically contained a few well-established components. The most common components are described below.

i. Carrier Oils

38. Liquid carriers were known components of stick deodorant and antiperspirant compositions prior to the purported invention. These materials could (1) function as emollients (skin conditioning agents that help maintain hydration); (2) help reduce undesirable visible residue (whitening) upon application of the composition to the skin; and/or (3) solubilize or disperse active ingredients such as the astringent metallic salts in antiperspirants. Ex. 1014, ¶¶ [0002], [0037], [0050]; Ex. 1008, ¶¶ [0046], [0050]; Ex. 1006, 4:22-26; Ex. 1013, 330-31. It was known that existing anhydrous liquids (used in personal care applications or suitable for topical application to the skin) could be used as carriers in stick compositions. Ex. 1014, ¶¶ [0037], [0044]. While volatile and/or non-volatile silicone oils (synthetic polymers) were often used as liquid carriers in traditional stick compositions (Ex. 1006, 4:9-15; Ex. 1014, ¶¶ [0038]-[0043], [0046]), non-volatile, non-silicone oils had also been identified as useful. Ex. 1008, ¶¶ [0015], [0017], [0043]-[0054]. Glyceryl esters of fatty acids, or triglycerides such as capric/caprylic triglycerides, had specifically been recognized as suitable (non-silicone) carrier oils of natural origin. Ex. 1008, ¶

PETITIONER DR. SQUATCH
EX. 1002

[0050]; Ex. 1003, 2:38-39, 9:45-46. As discussed in more detail below, since before the '752 Patent, a demand had arisen for "natural" formulations, which often included the exclusion or reduction of synthetic ingredients and ingredients otherwise believed to be harmful (even where naturally derived).

39. It was known that the carrier oil component of a stick deodorant could be a silicone oil, natural oil, and combinations thereof. Ex. 1008, ¶¶ [0013]-[0020], [0038]-[0054]; Ex. 1007, 11; Ex. 1016, 6-7; Ex. 1017, 5-7; Ex. 1018, 5-6. The total amount of carrier oil could be, for example, about 40-80% by weight of the stick composition and, where mixtures of silicone and natural oils, each could comprise, e.g., 20-40% by weight of the total stick composition. Ex. 1008, ¶¶ [0013]-[0020], [0038]-[0054]. A POSA would have understood that whether to use a silicone oil or natural oil (or a combination)—and what oil amount to use—was simply a design choice.

ii. Structurants

40. Typically, structurants were known to be materials solid at ambient conditions that were added to stick compositions to solidify the carrier oil. Ex. 1008, ¶ [0057] ("[F]orming a mobile liquid oil phase at an elevated temperature throughout which the structurant is distributed, and in particular by dissolution, such that when the composition cools or is cooled below its setting temperature, a solid product is

PETITIONER DR. SQUATCH
EX. 1002

obtained."); Ex. 1014, ¶¶ [0028]-[0029]; Ex. 1001, 4:57-61, 5:29-38. Essentially, structurants were used to allow the composition to form a "stick."

41. Structurants with different melting point temperatures were used, often in combination, to adjust certain properties of the stick including hardness. Ex. 1014, ¶ [0029]; Ex. 1015, 19-24; Ex. 1049; Ex. 1001, 4:57-61, 5:29-38; Ex. 1013, 331. Known examples of structurants included waxes (waxy materials), organic solids, modified silicone solids, crystalline or other gellants, and combinations thereof. Ex. 1014, ¶ [0029]. Long chain fatty alcohols such as stearyl alcohol had been recognized and used as preferred structurants. *Id.* ¶ [0030]; Ex. 1007, 11; Ex. 1008, ¶¶ [0001], [0019], [0058]-[0059], [0071]; Ex. 1013, 247. Arrowroot powder was another known structurant that had been used to thicken stick compositions. Ex. 1019, 5, 11-15, 17-19, 23 ("Arrowroot Powder is used as [a] thickening agent [in deodorants]"); Ex. 1020, 2-5 ("Arrowroot Powder is a very lightweight thickener that helps give some heft."). Structurants were known to comprise, for example, 3-35% by weight of the total stick composition. Ex. 1014, ¶ [0028].

42. For deodorant sticks, the structurant is what mixed with the carrier oil to cause the formulation to have the consistency (e.g., hardness) of a stick form. In addition to adjusting the balance between, e.g., waxes of different melting points to control hardness, a POSA would have appreciated that the amount of structurant controls the hardness of the stick.

PETITIONER DR. SQUATCH
EX. 1002

iii. Fragrances

43. Fragrances were commonly incorporated into deodorants and antiperspirants to mask axillary malodors or odors from the product base. Ex. 1013, 194-201, 250-51. Fragrances, known for their effect on mood, were used to enhance the consumer experience and reassure consumers of continuing product efficacy. *Id.* Fragrances were typically comprised of many distinct compounds and were classified as either natural or synthetic. *Id.*, 195; Ex. 1001, 9:29-46. Natural or essential oil fragrances were obtained from natural sources (e.g., plants or animals) using physical separation techniques such as distillation and extraction. Ex. 1013, 195; Ex. 1001, 9:38-46. A wide range of essential oils including, e.g., lemongrass oil, clove oil, and cinnamon oil, had also been known to possess antimicrobial activity. Ex. 1013, 196; Ex. 1021, 209, 211-12.

iv. Antimicrobials

44. Antimicrobials were included as active ingredients in deodorants and antiperspirants to prevent axillary odor by eliminating the bacteria responsible for formation of odorous compounds. Ex. 1013, 171-83. Numerous antimicrobials were known. *Id.* Sodium bicarbonate (i.e., baking soda), in particular, had long been used in deodorants and antiperspirants and was thought to deodorize via chemical modification of odorous compounds, i.e., reacting with the acidic compounds responsible for malodor to form non-volatile salts. *Id.*, 190, 347; Ex. 1005, 133. It

PETITIONER DR. SQUATCH
EX. 1002

was also understood that baking soda had antimicrobial and/or adsorptive properties as well. Ex. 1013, 190; Ex. 1022, 981-82 ("Sodium bicarbonate (SB) inhibited the growth of bacteria and yeasts in agar media model systems under certain conditions."); Ex. 1005, 133 (explaining that changes to the pH caused by sodium bicarbonate may inhibit the bacteria producing malodorous compounds). Some users reported that baking soda in deodorant sticks irritated their skin. Ex. 1017, 5-6; Ex. 1009, 6. Magnesium hydroxide, another antimicrobial, had been used as a substitute for baking soda and was not found to cause the same type of skin irritation. Ex. 1017, 5-8; Ex. 1009, 6, 9; Ex. 1004, 5:52-60, 6:9-12, 6:31-34, 8:40-44.

c. Hardness of Anhydrous Stick Compositions

45. Hardness was a known physical parameter affecting consumer acceptance that was measured and controlled during the development of stick compositions. Ex. 1006, 6:23-25; Ex. 1014, ¶ [0003]. Hardness was known to be closely related to other product attributes such as strength against breakage, storage stability, and product aesthetics (e.g., smooth application/gliding on the skin, and drier skin feel after use). Ex. 1014, ¶ [0003]. Formulators endeavored to develop compositions that had "satisfactory strength and hardness while exhibiting aesthetically pleasing attributes." *Id.*, ¶¶ [0003]-[0005]. Since long before the '752 Patent, it was known that formulations that contained too large an amount of

PETITIONER DR. SQUATCH
EX. 1002

structurant(s) could result in overly hard structures that were "too brittle" and/or "cosmetically unacceptable." *Id.*, ¶ [0003].

46. One type of test that was used to measure hardness of a stick composition was the needle penetration test. Ex. 1006, 2:56-58, 6:23-29; Ex. 1008, ¶ [0026]. For this type of test, a needle of specified dimensions/weight is affixed to a vertical rod and positioned directly above a prepared sample such that the point of the needle is touching the top of the surface of the sample. Ex. 1001, 11:38-43. The rod is released and allowed to travel downward. Penetration is measured as the tenths of a millimeter travelled following the release. *Id.*, 11:45-46. A higher value corresponds to a softer stick. Ex. 1008, ¶ [0026]. Well before the '752 Patent, it was known that the hardness of "typical" stick compositions using an ASTM D-1321 needle penetration test ranged from about 7.0 mm to about 14.0 mm,[1] and that products with hardness that fell outside that range would "typically generate low consumer acceptance ratings." Ex. 1006, 2:56-58, 6:23-29.

47. As discussed above, formulators (including a POSA) were aware that the hardness of a stick compositions could be controlled by adjusting the concentration or type of liquid carrier and/or structurant (e.g., more structurant,

[1] This range is the same as from about 70 mm*10 to about 140 mm*10 per the conversion provided in the '752 Patent. Ex. 1001, 12:52-56 (explaining that 80 mm*10 is the same as 8 mm).

PETITIONER DR. SQUATCH
EX. 1002

balancing waxes with high and low melting points, etc.). Ex. 1014, ¶ [0037] ("Such [liquid carrier] concentration will vary depending upon variables such as desired product hardness . . . ."); Ex. 1001, 5:35-38, 6:27-29 ("The concentration and type of solid structurants selected for use in the deodorant compositions will vary depending upon the desired product hardness. . . ."). For example, U.S. Patent 4,049,792, which is assigned to Patent Owner and incorporated by reference in the '752 Patent (Ex. 1001, 10:47-51), states:

> The low melting point wax can be used as an adjunct to the high melting point wax to provide structure and as an emollient. The low melting point wax can also be used to adjust the feel of the stick. ***One skilled in the art will easily be able*** to make a product which feels more brittle, soft, slippery, sticky, rough, etc., by blending various suitable high melting point and low melting point waxes.

Ex. 1041, 4:37-44 (emphasis added). A greater amount of structurants was known to result in harder sticks, while a lesser amount was known to result in softer sticks. *See* Ex. 1014, ¶¶ [0003], [0028]-[0029] ("Using a large amount of waxy structurant may not be necessarily effective since it may result in an overly hard structure.").

3. The Move to Natural Deodorants

a. Aluminum-Free

48. By the time of the purported invention, it was known that many consumers were seeking cosmetic products that were natural or otherwise free of potentially harmful ingredients. Ex. 1010, 2 ("[P]roducts that are free from certain ingredients or full of natural ones"); Ex. 1012, 1 (Patent Owner admitting in

PETITIONER DR. SQUATCH
EX. 1002

November 2017 that "consumers [] have preferences to avoid certain ingredients such as parabens and aluminum"). Natural cosmetic products were typically characterized and perceived as safer and/or healthier alternatives to traditional products. *See, e.g.*, Ex. 1023, 40-41. As a result of the connection with safety and health, the term "natural" in the deodorant category became associated not only with the inclusion of natural ingredients, but also the absence of aluminum, which some believed was correlated to an increased risk of Alzheimer's disease, breast cancer, and/or prostate cancer. Ex. 1024, 833; Ex. 1013, 215; Ex. 1023, 40; Ex. 1007, 5, 8. For stick compositions, aluminum-free meant removal of aluminum salts that had traditionally been included in formulations for their anti-sweat and/or antimicrobial functionality. *Supra* § VIII.A.1; Ex. 1007, 11; Ex. 1013, 332.

49. Aluminum-free deodorant sticks were well documented before the filing of the '752 Patent. In fact, independent formulators had publicly shared recipes online for homemade deodorants that were natural and free of aluminum. *See generally* Ex. 1020; Ex. 1018; Ex. 1016; Ex. 1017. In response to the trend, cosmetic companies had also launched deodorant products addressing those consumer preferences. For example, the deodorant company Native had developed and marketed natural, aluminum-free deodorant sticks as early as 2016.[2] Ex. 1007, 5, 11.

[2] Comparative Formula 1 in the '752, which is described in the specification as a "currently marked product," contains the same nine most predominant ingredients

PETITIONER DR. SQUATCH
EX. 1002

A POSA would have appreciated that cosmetics companies endeavored to keep apprised of trends in consumer demand for particular product features and attributes.

b. Silicone-free

50. The move to natural deodorant formulations also involved the removal of certain synthetic ingredients, such as silicones, from stick compositions. Consumers preferred silicone-free formulations due to real or perceived health and environmental risks related to silicones. Ex. 1026, 1:41-57. For example, silicone and its degradants had potential links to autoimmune system deficiencies in women with silicone breast implants as well as other disorders. *Id.* Some publications suggested that silicones could cause environmental harms, such as bioaccumulation and environmental toxicity. *Id.*; Ex. 1027, ¶¶ [0003]-[0004]; Ex. 1028, 814-15.

51. As discussed in Section VIII.A.2.b.i, the liquid carrier in traditional stick compositions could be comprised of both synthetic silicone oils and natural, non-silicone oils, like triglycerides. Natural deodorant stick formulations, including Native's 2016 deodorant and others, were known to contain only natural oils. Ex. 1007, 11; Ex. 1017, 6; Ex. 1016, 6.

by weight as Native's 2016 natural, aluminum-free deodorant stick. Ex. 1007, 5, 11; Ex. 1045 at 3:1-45, Table 1; 5:18-19 (indicating "hydrogenated castor oil" and "castor wax" are interchangeable and refer to the same material). Patent Owner acquired Native after the commercial introduction of the Native deodorants but before filing date of the '752 Patent. *See* Ex. 1007, 11; Ex. 1010, 1-2.

PETITIONER DR. SQUATCH
EX. 1002

c. Natural Antimicrobials

52. Developing natural deodorant formulations also involved replacing synthetic antimicrobials, like triclosan, with natural alternatives. Natural antimicrobials such as sodium bicarbonate (i.e., baking soda) and zinc oxide were known to have been incorporated into deodorant compositions. Ex. 1018, 5-6; Ex. 1016, 6; Ex. 1007, 11; Ex. 1004, 5:52-60, 6:9-12, 6:31-34, 8:40-44; Ex. 1003, 3:50-4:21; Ex. 1029, 264; Ex. 1013, 2, 170, 373-74. As mentioned above, formulators (including even those making homemade sticks) were aware that using baking soda in natural deodorant stick formulations could result in unwanted skin irritation for some users. Ex. 1017, 5-7 ("[T]he absence of baking soda means no itchy, red pits . . . for those of us with sensitive skin."); Ex. 1009, 6, 9 (discussing the "rash you get after using deodorant with baking soda"). Magnesium hydroxide had been used as a natural antimicrobial alternative that did not cause the same type of skin irritation. Ex. 1009, 6; Ex. 1004, 5:52-60, 6:9-12, 6:31-34, 8:40-44.

d. Natural Fragrances

53. The push towards natural deodorant formulations also involved replacing synthetic fragrances with natural alternatives like essential oils. *See* Ex. 1007, 11. Synthetic fragrances in deodorants and other cosmetic products were known to play a role in allergic contact dermatitis. *See generally* Ex. 1030; Ex. 1031; Ex. 1032; Ex. 1023. Natural fragrances were desired by some consumers, over

PETITIONER DR. SQUATCH
EX. 1002

synthetic fragrances, based on their perceived relative safety and/or lower allergy incidence rates. *See* Ex. 1023, 40. In addition, many natural essential oils possessed antimicrobial activity, a property particularly well-suited for deodorants. Ex. 1013, 196; Ex. 1021, 209, 211-12.

B. The '752 Patent Disclosure

54. The '752 Patent is directed to deodorant formulations. At the outset, the patent acknowledges that it was known that consumers were seeking natural deodorants, without aluminum and silicones, that were not "too hard." Ex. 1001, 1:10-24 ("Many consumers are seeking more natural, aluminum-free deodorant offerings, often mostly free of silicones."). The background section further states consumers "want a good glide, non-sticky, and non-greasy application." *Id.*, 1:12-13. And it states that "a mostly silicone-free formula will often use natural oils or natural oil-based triglycerides," which a POSA would have understood to include liquid triglycerides. *Id.*, 1:13-15. The background section explains that "natural oils" such as coconut oil, may be "undesirably greasy." *Id*., 1:15-21.

55. The '752 Patent purports to provide compositions to address those consumer demands. The patent discloses, for example: "A deodorant stick comprising: at least about 25% of a liquid triglyceride; at least one antimicrobial; a primary structurant with a melting point at least about 50°C.; and less than 8% of secondary structurants having a melting point of at least about 60°C.; said stick being

PETITIONER DR. SQUATCH
EX. 1002

free of an aluminum salt; and said stick having a hardness from about 80 mm*10 to about 140 mm*10, as measured by penetration with ASTM D-1321 needle." *Id.*, 1:28-35.

56. Table 1 provides compositions of two known "currently marketed" deodorant sticks, Comparative Formula 1 and Comparative Formula 2. *Id.*, 2:61-3:36, Table 1. Comparative Formula 1, for example, contained:

i. 34.15% Caprylic/Capric Triglyceride;

ii. 23% Arrowroot Powder;

iii. 12% Stearyl Alcohol;

iv. 12% Baking Soda;

v. 6% Shea Butter;

vi. 4.75% Coconut Oil;

vii. 3% Castor Wax;

viii. 2.5% Polyclycerol-3 Beeswax;

ix. 1% Jojoba Esters 70;

x. 1% Glyceryl Caprylate (and) Glyceryl Undecylenate; and

xi. 0.6% Perfumes.

Id. Notably, Comparative Formula 1 and Comparative Formula 2 contained all the features/elements of the '752 Patent's purportedly inventive deodorant stick discussed above, except that the hardness of the comparative formulas (i.e.,

PETITIONER DR. SQUATCH
EX. 1002

hardness of 63 mm*10 and 56 mm*10, respectively) fell outside of the ’752 Patent’s stated range (i.e., “about 80 mm*10 to about 140 mm*10). *Id.*, 1:28-35, 2:61-3:36, Table 1. Notably, the broad hardness range stated in the ’752 Patent mimics the range known in the field, since at least 1998, to represent consumer preference. Ex. 1006, 6:23-29.

57. In addition, the ’752 Patent’s general formulations calls for structurants typically having a melting point above 50°C in order to provide a stable structure to the stick. *Id.*, 3:37-39. The ’752 Patent acknowledges that there were many known structurants from the field that met this requirement, including, e.g., beeswax and stearyl alcohol. *Id.*, 4:62-67, 5:43-51.

IX. GROUND 1: Claims 1-13 are Obvious over Lesniak in view of Bianchi ’254

A. Overview

58. In my opinion, claims 1-13 are rendered obvious over Lesniak in view of Bianchi ’254. Lesniak describes natural anhydrous personal care compositions that could be, among other things, a deodorant stick in the form of an antiperspirant stick.[3] Ex. 1003, 1:16-35, 4:22, 5:5-32, 10:27, 10:32-33. In particular, Lesniak is directed to “personal care compositions which are formed from natural ingredients”

[3] *See* Ex. 1036, 2 (“[A]ll antiperspirants are deodorants . . . .”); Ex. 1037, 246 (“Antiperspirants are deodorants . . . .”).

PETITIONER DR. SQUATCH
EX. 1002

and improvements to such natural compositions that make them more palatable to consumers. *Id.*, 1:16-35, 4:61-67, 5:5-31, 10:31-33.

59. Lesniak explains that such compositions may comprise, e.g.:

- at least about 25 wt% of a liquid triglyceride, such as caprylic/capric triglyceride (*id.*, 2:38-39, 9:45-46);
- about 8 to 19 wt% of a primary structurant, such as beeswax (*id.*, 1:39-54, 2:5-7, 2:24-25); and
- at least one antimicrobial, such as zinc oxide (*id.*, 3:39-4:21, 8:31-9:59).

60. Lesniak's compositions do not contain aluminum salts, baking soda, or synthetic fragrances. *Id.*, 3:50-4:21, 8:37-42. And Lesniak describes how to make the compositions in stick form. *Id*., 15:9-45.

61. While Lesniak describes formulating deodorant compositions with "fatty alcohols," which a POSA would have understood to include stearyl alcohol, it does not expressly disclose using stearyl alcohol as a structurant. Ex. 1003, 8:31-32; Ex. 1001, 5:43-44, 61-62; Ex. 1008, Tables 1, 5. Bianchi '254 states stearyl alcohol is a "widely used" structurant "of particular interest" for deodorants and describes examples comprising 12-25% of stearyl alcohol. Ex. 1008, ¶¶ [0001], [0018], [0019], [0058]. Therefore, a POSA would have found it obvious to use stearyl alcohol as a structurant in the composition of Lesniak, as taught by Bianchi '254.

PETITIONER DR. SQUATCH
EX. 1002

62. Lesniak also does not expressly teach hardness as measured by penetration with an ASTM-D 1321 needle. However, Bianchi ’254 establishes that the claimed hardness range was standard.

B. Rationale (Motivation) Supporting Obviousness

63. In my opinion, Lesniak aims to formulate deodorant sticks that have a consumer-preferred “skin feel” (e.g., reduced tackiness and drag). Ex. 1003, 1:16-35, 5:51-53. While Lesniak describes using “fatty alcohols” in its deodorant compositions, it does not expressly mention stearyl alcohol. *Id.*, 8:31-32. Bianchi ’254, aiming to achieve stick compositions with a “‘clean’, non-sticking feeling”, highlights stearyl alcohol as a “widely used” structurant “of particular interest” for deodorants, and provides examples where it is successfully used as a structurant. Ex. 1008, ¶¶[0001], [0010], [0018], [0019], [0058]. Accordingly, a POSA would have been motivated to incorporate stearyl alcohol as a structurant in Lesniak’s deodorant compositions to achieve consumer-preferred “skin feel.” Ex. 1002, ¶¶_.

64. Bianchi ’254 also describes antiperspirant sticks having, e.g., “hardness values of from 8 to 15 mm, preferably 8 to 10 mm, measured pursuant to” a test with a DIN 51-579 needle (Ex. 1008, ¶¶[0026], [0117]), which the ’752 Patent admits is an ASTM-D 1321 needle (Ex. 1001, 11:50-65) and would have been understood by a POSA as such. When formulating a natural, aluminum-free deodorant stick based on the compositions in Lesniak, a POSA would have looked at publications

PETITIONER DR. SQUATCH
EX. 1002

describing other stick compositions, like Bianchi '254, for information regarding preferred hardnesses. And a POSA would have been motivated to formulate a deodorant stick to have a hardness within Bianchi '254's range because that range was known to be important for "consumer acceptance."[4]

65. I have also provided a detailed explanation of the rationale (motivation) supporting obviousness in the claim mapping below.

C. Reasonable Expectation of Success

66. A POSA would have had a reasonable expectation of success in using stearyl alcohol as a structurant in Lesniak's composition because Bianchi '254 described it as a "widely used" structurant and showed it had been successfully formulated into deodorant compositions as a structurant. Moreover, a POSA would have appreciated that deodorant compositions could be formed through various combinations of known ingredients, such as structurants, as simple design choices.

67. A POSA also would have had a reasonable expectation of success to formulate a deodorant stick such as the stick disclosed by Lesniak to have a hardness within the claimed range because others, such as the inventors in Bianchi '254, had

[4] Ex. 1006, 2:56-58, 6:23-29. In addition, in a patent filed in 1995, Patent Owner described deodorant hardness ranges "of preferably from about 65-200, more preferably from about 70 to about 160, most preferably from about 75 to about 120," as measured by a "penetration needle as specified in ASTM Method D 1321-DIN 51 579." Ex. 1025, 12:41-55.

PETITIONER DR. SQUATCH
EX. 1002

successfully formulated antiperspirants to have a hardness within that range. Ex. 1008, ¶¶ [0026], [0117]. A POSA would have readily understood how to adjust the hardness of the stick, using Lesniak's ingredients, inasmuch as a POSA would have known that adjusting the amount of structurant (using less if the deodorant was too hard, and vice-versa) could achieve the target hardness.[5] For instance, Lesniak describes formulating a deodorant stick with 8% to 19% of a "first" structurant, such as beeswax, and also optionally including 3% to 15% of a "second" structurant, such as sunflower seed wax and/or hydrogenated castor oil. Ex. 1003, 9:45-54, 1:39-2:30, 3:43-4:21, 5:32-48. A POSA would have understood that the hardness could be adjusted by altering the amount of the first structurant and/or by incorporating secondary structurants.

D. Analogous Art

68. Lesniak and Bianchi '254 are in the same field as the '752 Patent, and all relate to personal care compositions, including deodorant and/or antiperspirant sticks.[6] *See* Ex. 1003, Abstract, Title, 3:39, 4:22, 8:43-46, 9:45, 10:27; Ex. 1008,

[5] *See* Ex. 1014, ¶¶[0028]-[0029] (defining structurant in the same manner as the '752 Patent and stating that the "structurant material contributes to the stick form with the desired . . . hardness"); *see also id.*, ¶[0003] ("Using a large amount of waxy structurant may not be necessarily effective since it may result in an overly hard structure.").

[6] Lesniak's discussion of other personal care compositions, such as sunscreens does not make it any less applicable to the formulation and/or antiperspirant sticks. A POSA would have understood that topical formulations could have multiple

PETITIONER DR. SQUATCH
EX. 1002

Abstract, ¶¶ [0010]-[0021]; Ex. 1001, Abstract, 1:10-2:57, 9:65-10:4. They all discuss hardness as a relevant and measurable parameter for stick compositions. Ex. 1001, 2:58-3:51, 11:30-56; Ex. 1003, 9:60-62, 10:17-26, 15:41-42; Ex. 1008, ¶¶ [0026], [0117].

E. Claim Mapping

69. In the claim mapping below, I have added numbering and lettering in brackets (*e.g.*, [1]A), [1]B)) to certain claim limitations, to facilitate the discussion.

CLAIM 1

"1[Pre]. A deodorant stick comprising:"

70. In my opinion, Lesniak describes this element. In particular, Lesniak discloses a deodorant stick in the form of an antiperspirant stick. Ex. 1003, 4:22, 9:45, 10:27 ("Optionally, the composition is a stick . . . . The composition can also be an antiperspirant.").

"[1]a. at least one antimicrobial; and"

71. In my opinion, Lesniak describes this element. In particular, Lesniak describes a deodorant stick with zinc oxide, which, as a POSA would have known,

---

applications, including as sunscreens, antiperspirants, and/or deodorants. Indeed, Patent Owner has other patents directed to "wax based cosmetic stick compositions" with applications in "sun care, moisturizing or analgesic sticks and antiperspirants/ deodorant sticks." Ex. 1043, Abstract, 1:5-9.

PETITIONER DR. SQUATCH
EX. 1002

is an antimicrobial. *See* Ex. 1003, 3:39-4:21, 8:31-9:59.[7] A POSA would have been motivated to include an antimicrobial such as zinc oxide in Lesniak's compositions to combat the bacteria that cause odor and/or product degradation. Ex. 1003, 1:16-35. Indeed, a POSA would have understood that an antimicrobial like zinc oxide would further Lesniak's goal of addressing natural personal care compositions' "lack [of] robustness against microbial attack." *Id.*

"[1]b. a structurant that is stearyl alcohol;"

72. In my opinion, Lesniak and Bianchi '254 describe this element. In particular, Lesniak describes formulating deodorant compositions with "fatty alcohols," which a POSA would have understood to include stearyl alcohol. Ex. 1003, 8:31-32. Bianchi '254 singles out stearyl alcohol as a "widely used" structurant "of particular interest" for deodorants. Ex. 1008, ¶¶[0001], [0058]. A POSA would have been motivated to use stearyl alcohol as a structurant in Lesniak's deodorant formulations and would have had a reasonable expectation of success in doing so because stearyl alcohol was a preferred option that had already been used successfully as a structurant in deodorant sticks.

[7] Ex. 1029, 264 ("Zinc oxide (ZnO) is an efficient antimicrobial agent that acts by means of several mechanisms involving different chemical species."); Ex. 1069, 19; Ex. 1070, 323-24; Ex. 1072, 2:1-3:5, 3:50-57.

PETITIONER DR. SQUATCH
EX. 1002

"[1c] said stick being free of an aluminum salt; and"

73. In my opinion, Lesniak describes this element. In particular, Lesniak describes formulating a deodorant stick that is free of an aluminum salt. *See* Ex. 1003, 1:39-2:30, 3:43-4:21, 5:32-6:23, 8:31-9:59.

74. Moreover, in my opinion, a POSA would have understood Lesniak's formulations to be complete deodorant sticks that did not require additional ingredients such as an aluminum salt. *See id.* Indeed, Lesniak's formulations include zinc oxide, which was a known alternative to aluminum. *See id.*[8] Moreover, a POSA would have understood Lesniak's preference for "natural" ingredients to militate against inclusion of ingredients such as aluminum that were thought to be unsafe. *See id.*, 1:16-31, 4:61-67, 5:5-32, 10:31-33.

"[1d] said stick having a hardness from about 80 mm*10 to about 140 mm*10, as measured by penetration with ASTM D-1321 needle;"

75. In my opinion, Bianchi '254 describes this element. In particular, Bianchi '254 describes that its antiperspirant sticks have "hardness values of from 8 to 15 mm, preferably 8 to 10 mm,[9] measured pursuant to" a test with a DIN 51-579

[8] *See* Ex. 1014, ¶ [0018] ("[A]ntiperspirant actives include astringent metallic salts, particularly inorganic and organic salts of aluminum, zirconium, and zinc, as well as mixtures thereof."); Ex. 1075, 16:40-47.

[9] *See* n.1, above; Ex. 1047, 8:59-9:13 (discussing measuring the hardness of deodorant with a "penetration needle as specified in ASTM Method-D 1321-DIN 51 579").

PETITIONER DR. SQUATCH
EX. 1002

needle (Ex. 1008, ¶¶ [0026], [0117]), which is an ASTM-D 1321 needle according to the '752 Patent (Ex. 1001, 11:50-65), and as would have been understood by a POSA.

76. Bianchi '254's hardness ranges overlap with the claimed range. *See* Ex. 1008, ¶¶ [0026], [0117]. In my opinion, there was nothing critical or unexpected about the claimed range relative to Bianchi '254's ranges. As a POSA would have understood, the minor deviations in the ranges yield predictable variations in degree (softer vs. harder) and do not produce a different kind of result. Indeed, Patent Owner obtained another patent that contains many of the same limitations as the '752 Patent (and appears to claim the same priority date(s)), yet recites the about 70 mm*10 to about 140 mm*10 hardness range rather than the 80 mm*10 to about 140 mm*10. Ex. 1075, claim 8. This further suggests that there is nothing critical about the about 80 mm*10 to about 140 mm*10 range.

77. In my opinion, a POSA would have been motivated to formulate a deodorant stick, such as Lesniak's deodorant stick, to have a hardness within Bianchi '254's preferred ranges because a POSA would have (i) looked to other references for preferred hardness ranges in the absence of any explicit teaching on this point in Lesniak and (ii) known that customers preferred hardness levels within the claimed

PETITIONER DR. SQUATCH
EX. 1002

range and the ranges stated in Bianchi '254.[10] And, in my opinion, a POSA would have had a reasonable expectation of success in doing so for reasons addressed above.

"[1e] wherein the deodorant stick is anhydrous"

78. In my opinion, Lesniak describes this element. In particular, Lesniak describes formulating a deodorant stick that is anhydrous, "to ensure micro-robustness in the package and during consumer use." Ex. 1003, Abstract, 1:16-54, 4:54-60, 5:5-54.

"[1f] and is substantially free of silicones."

79. In my opinion, Lesniak describes this element. In particular, Lesniak describes formulating a deodorant stick without silicones. Ex. 1003, 1:39-2:30, 3:43-4:21, 5:32-6:23, 8:31-9:59. A POSA would have understood Lesniak's formulations to be complete deodorant sticks that did not require additional ingredients such as silicones. *Id.* Moreover, a POSA would have understood Lesniak's preference for "natural" ingredients to militate against inclusion of synthetic ingredients such as silicones. *Id.*, 1:16-31, 4:61-67, 5:5-32, 10:31-33.

[10] *See* Ex. 1006, 2:56-58, 6:23-29.

PETITIONER DR. SQUATCH
EX. 1002

CLAIM 2

"2. The deodorant stick of claim 1, wherein the antimicrobial is a powder with a water solubility of at most about 90 g/L at 25° C."

80. In my opinion, Lesniak describes this element. In particular, Lesniak describes formulating a deodorant stick with an antimicrobial in the form zinc oxide "as a powder." Ex. 1003, 8:46-48. Zinc oxide, as a POSA would have known, has a water solubility of at most about 90 g/L at 25° C.[11]

CLAIM 3

"3. The deodorant stick of claim 1, wherein the deodorant stick is substantially free of baking soda."

81. In my opinion, Lesniak describes this element. In particular, Lesniak describes formulating a deodorant stick with zinc oxide, an antimicrobial, and without baking soda (another antimicrobial). *See* my claim 1 analysis (Ground 1); *see, e.g.*, Ex. 1003, 1:39-2:30, 3:43-4:21, 5:32-6:23, 8:31-9:59. A POSA would have understood Lesniak's formulations to be complete deodorant sticks that did not require additional ingredients such as baking soda.

[11] Ex. 1038, 47335 ("The reported water solubility of zinc oxide ranges from 1.6 milligrams per liter (mg/L) (29 deg.C) to 5 mg/L (25 deg.C).")

PETITIONER DR. SQUATCH
EX. 1002

CLAIM 4

"4. The deodorant stick of claim 1, wherein the deodorant stick is substantially free of a synthetic fragrance."

82. In my opinion, Lesniak describes this element. In particular, Lesniak describes formulating a deodorant stick without synthetic fragrance and, in particular, describes the use of natural fragrances. Ex. 1003, 8:31-41. A POSA would have understood Lesniak's formulations to be complete deodorant sticks that did not require additional ingredients such as synthetic fragrance. *Id.*, 1:39-2:30, 3:43-4:21, 5:32-6:23, 8:31-9:59. Moreover, a POSA would have understood Lesniak's preference for "natural" ingredients to militate against inclusion of synthetic fragrance. *Id.*, 1:16-31, 4:61-67, 5:5-32, 10:31-33.

CLAIM 5

"5. The deodorant stick of claim 1, wherein the stick comprises from about 5% to about 20% of the structurant."

83. In my opinion, Lesniak and Bianchi '254 describe this element. In particular, Bianchi '254 describes deodorant formulations comprising 12-25% of stearyl alcohol as the structurant. Ex. 1008, ¶¶ [0018], [0019], [0058]. Lesniak describes formulating a deodorant stick with 8% to 19% of a structurant. Ex. 1003, 9:45-54; *see also id.*, 1:39-2:30, 3:43-4:21, 5:32-48. A POSA therefore would have been motivated to use about 5% to about 20% of stearyl alcohol as a structurant

PETITIONER DR. SQUATCH
EX. 1002

when formulating a deodorant stick such as Lesniak's insofar as that amount had been used successfully in deodorant sticks, as described in Bianchi '254. Also, a POSA would have understood that the adjustment of the structurant amount was an issue of routine optimization, making the claimed range obvious even without Bianchi '254.

84. Bianchi '254's range of stearyl alcohol overlap with the claimed range. Ex. 1008, ¶¶ [0018], [0019], [0058]. In my opinion, there was nothing critical or unexpected about the claimed range relative to Bianchi 254's range. As a POSA would have understood, the minor deviations in the ranges yield predictable variations in degree and do not produce a different kind of result. For example, using less stearyl alcohol generally yields a softer stick, merely changing the degree of hardness.

CLAIM 6

"6. The deodorant stick of claim 1, further comprising a liquid triglyceride."

85. *See* my claim 9 analysis of ground 1.

CLAIM 7

"7. The deodorant stick of claim 1, further comprising caprylic/capric triglyceride."

86. *See* my claim 9 analysis of ground 1.

PETITIONER DR. SQUATCH
EX. 1002

CLAIM 8

"8. The deodorant stick of claim 1, further comprising a triglyceride."

87. *See* my claim 9 analysis of ground 1.

CLAIM 9

"9. The deodorant stick of claim 1, further comprising from about 25% to 50% of a liquid triglyceride."

88. In my opinion, Lesniak describes this element. In particular, Lesniak describes formulating a deodorant stick with from about 25% to 50% of a liquid triglyceride, such as as caprylic/capric triglyceride, which the '752 Patent identifies as an exemplary liquid triglyceride, as a POSA would have known (Ex. 1001, 6:8-15). Ex. 1003, 9:45-59 ("In certain embodiments, the stick comprises 46 to 56% by weight of the ester . . . In certain embodiments for the stick, the ester comprises caprylic/capric triglyceride."); 1:39-63, 2:31-41, 3:43-4:21 (disclosing examples of points within the claimed range, e.g., 48% caprylic/capric triglyceride), 6:30-43, 8:57-9:44.

89. Lesniak's ranges of liquid triglyceride overlap with the claimed range. *See id.* In my opinion, there was nothing critical or unexpected about the claimed range relative to Lesniak's ranges. As a POSA would have understood, the minor deviations in the ranges yield predictable variations in degree and do not produce a

PETITIONER DR. SQUATCH
EX. 1002

different kind of result. For example, using more liquid triglyceride generally yields a softer stick, merely changing the degree of hardness.

CLAIM 10

"10. The deodorant stick of claim 1, further comprising from about 25% to 50% of caprylic/capric triglyceride."

90. *See* my claim 9 analysis of ground 1.

CLAIM 11

"11. The deodorant stick of claim 1, further comprising from about 25% to 46.9% of a liquid triglyceride."

91. *See* my claim 9 analysis of ground 1.

CLAIM 12

"12. The deodorant stick of claim 1, further comprising from about 25% to 46.9% of caprylic/capric triglyceride."

92. *See* my claim 9 analysis of ground 1.

CLAIM 13

"13. The deodorant stick of claim 1, further comprising from about 25% to 42.7% of a liquid triglyceride."

93. *See* my claim 9 analysis of ground 1. In addition, Bianchi '254 describes an antiperspirant stick with 20-40% of a natural oil such as a liquid triglyceride. Ex. 1008, ¶¶ [0017], [0050]. Thus, in my opinion, a POSA would have been motivated to use from about 25% to 42.7% of a liquid triglyceride in a deodorant stick, and would have had a reasonable expectation of success in doing

PETITIONER DR. SQUATCH
EX. 1002

so, inasmuch as (i) Bianchi ’254 already suggests the same with its 20-40% amount, and (ii) a POSA would have understood that the amount of natural oil such as liquid triglyceride to use was simply a design choice and an issue of routine optimization.

X. GROUND 2: Claim 14 is Obvious Over Lesniak in view of Bianchi ’254 and Phinney

A. Overview of the Combination

94. In my opinion, the subject matter of claim 14 would have been obvious over Lesniak in view of Bianchi ’254 and Phinney. As explained above, Lesniak and Bianchi ’254 disclose and/or suggest all of the limitations of independent claim 1. *Supra* § IX. While Lesniak teaches deodorant stick compositions that may contain zinc oxide (a known antimicrobial), it does not expressly teach that magnesium hydroxide was also known to be an antimicrobial useful in deodorant stick compositions. Phinney states that metal oxides, such as zinc oxide, are not particularly efficacious antimicrobials in deodorants when used alone. Ex. 1004, 2:33-37. Consequently, Phinney describes using, in a deodorant stick, magnesium hydroxide as an antimicrobial, in addition to zinc oxide. *Id.*, 5:52-60, 6:9-12, 6:31-34, 8:40-44. Phinney acknowledges that prior publications described magnesium hydroxide as an “effective deodorant” and touts its enhanced effectiveness in preventing odor when used in combination with zinc oxide. *Id.*, 1:12-22, 2:33-37,

PETITIONER DR. SQUATCH
EX. 1002

5:64-66. Thus, a POSA would have found it obvious to add magnesium hydroxide to the composition of Lesniak, as taught by Phinney.

B. Rationale (Motivation) Supporting Obviousness

95. In my opinion, a POSA would have been motivated to combine the teachings of Lesniak and Bianchi '254 for the reasons discussed above. *Supra* § IX. In addition, both Lesniak and Phinney are directed to deodorants with "natural ingredients." Ex. 1004, 1:5-9; Ex. 1003, 4:61-5:31, 9:45, 10:27, 10:31-33. Both describe using known antimicrobials. *See, e.g.*, Ex. 1004, 1:15-19, 5:52-67, 6:31-34, 8:40-44; Ex. 1003, 3:39-4:21, 8:31-9:59. Because Lesniak teaches using zinc oxide (a known antimicrobial) and Phinney teaches that using magnesium hydroxide in combination with zinc oxide improves antimicrobial properties, a POSA would have had a reason to follow Phinney's teaching and add magnesium hydroxide to Lesniak's composition. A POSA would have been motivated to incorporate known improvements to odor protection, particularly where the known improvement also was known to maintain the "natural" composition intended by Lesniak.

C. Reasonable Expectation of Success

96. In my opinion, a POSA would have had a reasonable expectation of success in using magnesium hydroxide as an antimicrobial in Lesniak's composition, as modified based on Bianchi '254, because Phinney described it as an "effective antimicrobial" and showed it had been successfully formulated into

PETITIONER DR. SQUATCH
EX. 1002

deodorant compositions containing zinc oxide where it provided long lasting odor protection. Moreover, a POSA would have appreciated that deodorant compositions could be formed through various combinations of known ingredients, such as antimicrobials, as simple design choices.

97. I have also provided a detailed explanation of the rationale (motivation) supporting obviousness in the claim mapping below.

D. Analogous Art

98. Lesniak, Bianchi '254, and Phinney are in the same field as the '752 Patent, and all relate to personal care compositions, including deodorant and/or antiperspirant sticks.[12] *See* Ex. 1003, Abstract, Title, 3:39, 4:22, 8:43-46, 9:45, 10:27; Ex. 1008, Abstract, ¶¶[0010]-[0021]; Ex. 1001, Abstract, 1:10-2:57, 9:65-10:4; Ex. 1004, Abstract, Title, 5:52-60, 6:9-12, 6:31-34, 8:40-44. In addition, Lesniak, Phinney, and the '752 Patent all describe and focus on the use of natural ingredients. *See* Ex. 1001, 2:49-3:50; Ex. 1003, 1:16-35, 4:61-67, 5:5-31, 10:31-33; Ex. 1004, Abstract, 1:5-9, 6:1-23.

[12] *See* n.3,6 above.

PETITIONER DR. SQUATCH
EX. 1002

E. Claim Mapping

CLAIM 14

"14. The deodorant stick of claim 1, wherein the at least one antimicrobial is selected from the group consisting of baking soda, magnesium hydroxide, hexamidine, magnesium carbonate, zinc carbonate, thymol, magnesium hydroxide & magnesium carbonate hydroxide, sodium carbonate, magnesium carbonate hydroxide, partially carbonated magnesium hydroxide, calcium carbonate, polyvinyl formate, salycilic acid, niacinamide, cinnamon essential oil, cinnamon bark essential oil, cinnamic aldehyde and combinations thereof."

99. In my opinion, Lesniak and Phinney describe and/or suggest this element. In particular, Lesniak teaches deodorant stick compositions containing zinc oxide (a known antimicrobial), but it does not expressly teach including magnesium hydroxide as an antimicrobial. Phinney discloses a deodorant stick that comprises magnesium hydroxide as an antimicrobial, in addition to zinc oxide (which is converted to zinc hydroxide in Phinney's formulations). Ex. 1004, 5:52-60, 6:9-12, 6:31-34, 8:40-44.

100. In my opinion, a POSA would have been motivated to add magnesium hydroxide to Lesniak's stick compositions because it was known that "a mixture of the hydroxides of zinc and magnesium could provide long lasting protection against odour due to perspiration," whereas zinc oxide alone was less effective "due to insolubility and low hydrolysis rate to a hydroxide form that could show some

PETITIONER DR. SQUATCH
EX. 1002

activity." *Id.*, 1:12-22, 2:33-37, 5:64-66 (discussing the "previously recognized synergy between the zinc and magnesium compounds"), 5:48-49 (explaining that magnesium hydroxide "has low solubility and therefore does not 'wash away' under heavy perspiration").[13]

101. Alternatively, in my opinion, a POSA would have been motivated to replace the zinc oxide in Lesniak's deodorant stick with magnesium hydroxide, as both were known to have been used as antimicrobials in natural deodorant sticks, but zinc oxide was thought to have lower efficacy in combatting odor.

XI. GROUND 3: Claims 15-16 and 18-19 are Obvious Over Lesniak in View of Phinney, Bianchi '254, and Anconi

A. Overview of the Combination

102. In my opinion, the subject matter of claims 15-16 and 18-19 would have been obvious over Lesniak in view of Phinney, Bianchi '254, and Anconi. While Lesniak describes formulating deodorant compositions with antimicrobials such as zinc oxide, it does not expressly teach the use of triethyl citrate, which a POSA would have recognized as another antimicrobial. Anconi discloses deodorant formulations that, like Lesniak's compositions, comprise zinc salts. Anconi states

[13] *See also* Ex. 1072, 2:1-3:5, 3:50-57 (discussing zinc oxide and magnesium hydroxide as interchangeable options for salts that "are insoluble or only sparingly soluble in water" and "perform[] a deodorancy function," including in stick compositions).

PETITIONER DR. SQUATCH
EX. 1002

that the composition may also include "ingredients known to have antibacterial and deodorant properties," and identifies triethyl citrate as such an ingredient. Ex. 1057, ¶ [0027]. Therefore, a POSA would have found it obvious to use triethyl citrate as an antimicrobial in the composition of Lesniak, as taught by Anconi.

B. Rationale (Motivation) Supporting Obviousness

103. In my opinion, it would have been obvious to use the teachings of Phinney, Bianchi '254, and Anconi in Lesniak's deodorant stick composition. A POSA would have been motivated to combine Lesniak with Phinney and Bianchi '254 for the reasons stated in Sections IX-X. In addition, Lesniak describes using zinc oxide in its deodorant compositions. As discussed above, zinc oxide was thought to have low efficacy as an antimicrobial in deodorants. And Anconi discloses triethyl citrate as an "ingredient[] known to have antibacterial and deodorant properties." Ex. 1057, ¶ [0027]. Accordingly, in my opinion, a POSA would have been motivated to incorporate triethyl citrate as an antimicrobial in Lesniak's deodorant compositions to improve their ability to combat odor. A POSA further would have been motivated to include triethyl citrate in Lesniak's deodorant compositions because, as discussed above, Lesniak's compositions contained liquid triglycerides, and triethyl citrate was known to prevent the degradation of

PETITIONER DR. SQUATCH
EX. 1002

triglycerides in compositions for topical use.[14] Also, triethyl citrate, as a known antimicrobial for use in antiperspirant compositions, would be an obvious design choice for improving the antibacterial properties of Lesniak's compositions.

104. I have also provided a detailed explanation of the rationale (motivation) supporting obviousness in the claim mapping below.

C. Reasonable Expectation of Success

105. In my opinion, a POSA would have had a reasonable expectation of success in using stearyl alcohol as a structurant and magnesium hydroxide in Lesniak's composition for the reasons discussed above in Sections IX-X. And a POSA would have had a reasonable expectation of success in using triethyl citrate as an antimicrobial in Lesniak's compositions because Anconi describes its successful use as an antimicrobial in deodorants, and others had successfully formulated compositions for topical application using triethyl citrate to prevent the degradation of triglycerides.[15] Moreover, a POSA would have appreciated that deodorant compositions could be formed through various combinations of known ingredients, such as structurants, emollients, and antimicrobials, as simple design choices with predictable results.

[14] *See* Ex. 1060, Abstract, ¶¶[0022]-[0040].
[15] *See* n.14, above.

PETITIONER DR. SQUATCH
EX. 1002

D. Analogous Art

106. Lesniak, Phinney, Bianchi '254, and Anconi are in the same field as the '752 Patent, and all relate to personal care compositions, including deodorant and/or antiperspirant sticks.[16] *See* Ex. 1001, Abstract, 1:10-2:57, 9:65-10:4; Ex. 1003, Abstract, Title, 3:39, 4:22, 8:43-46, 9:45, 10:27; Ex. 1004, Abstract, Title, 5:52-60, 6:9-12, 6:31-34, 8:40-44; Ex. 1008, Abstract, Title, ¶¶ [0010]-[0021]; Ex. 1057, Abstract, ¶¶ [0049]-[0052].

E. Claim Mapping

CLAIM 15

"15[Pre]. A deodorant stick comprising:"

107. *See* my claim 1 analysis of ground 1.

"[15] a. at least about 25% by weight liquid triglyceride;"

108. *See* my claim 9 analysis of ground 1.

"[15] b. a starch;"

109. In my opinion, Lesniak describes this element. In particular, Lesniak describes formulating a deodorant stick with a starch. Ex. 1003, 8:31-34. A POSA would have been motivated to include starch in Lesniak's deodorant sticks for its known absorbent and structurant properties. And a POSA would have had a

[16] *See* n.3,6, above.

PETITIONER DR. SQUATCH
EX. 1002

reasonable expectation of success in doing so because starch (e.g., tapioca/arrowroot) had been successfully used in natural deodorants, even by amateur formulators making deodorants at home.[17]

"[15] c. stearyl alcohol;"

110. *See* my claim 1 analysis of ground 1.

"[15] d. magnesium hydroxide;"

111. *See* my claim 14 analysis of ground 2.

"[15] e. shea butter;"

112. In my opinion, Lesniak describes this element. In particular, Lesniak describes formulating a deodorant stick with shea butter. Ex. 1003, 3:27-4:12, 8:1-14. A POSA would have been motivated to include shea butter in Lesniak's deodorant sticks for its known emollient and structurant properties. And a POSA would have had a reasonable expectation of success in doing so because shea butter had been successfully used in natural deodorants, even by amateur formulators making deodorants at home with less skill than a POSA.[18]

"[15] f. coconut oil;"

113. In my opinion, Lesniak describes this element. In particular, Lesniak describes formulating a deodorant stick with coconut oil. Ex. 1003, 2:51-67, 3:25-

[17] Ex. 1009, 7-9; Ex. 1016, 5-6; Ex. 1017, 6-8.
[18] *See* Ex. 1009, 7; Ex. 1016, 5-6.

PETITIONER DR. SQUATCH
EX. 1002

4:12, 7:66-67. A POSA would have been motivated to include coconut oil in Lesniak's deodorant sticks for its known emollient and structurant properties. And a POSA would have had a reasonable expectation of success in doing so because coconut oil had been successfully used in natural deodorants, even by people formulating deodorants at home with less skill than a POSA.[19]

"[15] g. triethyl citrate; and"

114. In my opinion, Lesniak describes this element. In particular, Lesniak describes using zinc oxide in its deodorant compositions. As discussed above, zinc oxide was thought to have low efficacy as an antimicrobial in deodorants. Anconi discloses triethyl citrate as an "ingredient[] known to have antibacterial and deodorant properties." Ex. 1057, ¶ [0027]. Accordingly, a POSA would have been motivated to incorporate triethyl citrate as an antimicrobial in Lesniak's deodorant compositions, and would have had a reasonable expectation of success in doing so, to improve their ability to combat odor. A POSA further would have been motivated to include triethyl citrate in Lesniak's deodorant compositions because, as discussed above, those compositions contained liquid triglyceride, and triethyl citrate was known to prevent the degradation of triglycerides in compositions for topical use.[20]

[19] *See* Ex. 1020, 2-5; Ex. 1071, 15-16, 26-34, 42-48.
[20] *See* n.14, above.

PETITIONER DR. SQUATCH
EX. 1002

"[15] h. sunflower seed oil;"

115. In my opinion, Lesniak describes this element. In particular, Lesniak describes formulating a deodorant stick with sunflower seed oil, which a POSA would have been motivated to include for its known emollient and/or structurant properties. Ex. 1003, 2:51-67, 3:25-4:22, 7:66-67, 9:52-59.

"[15i] said deodorant stick being free of an aluminum salt;"

116. *See* my claim 1 analysis of ground 1.

"[15j] and wherein said stick has a hardness from about 80 mm*l0 to about 140 mm*l0, as measured by penetration with ASTM D-1321 needle."

117. *See* my claim 1 analysis of ground 1.

CLAIM 16

"16. The deodorant stick of claim 15, wherein the starch is tapioca starch."

118. In my opinion, Lesniak describes this element. In particular, Lesniak describes that tapioca starch may be included in a deodorant stick. Ex. 1003, 8:31-32, 10:43-44, 11:4-6. A POSA would have been motivated to include tapioca starch in Lesniak's deodorant sticks for its known absorbent and structurant properties.[21] And a POSA would have had a reasonable expectation of success in doing so

[21] Ex. 1044, ¶¶[0038]-[0039], [0042].

PETITIONER DR. SQUATCH
EX. 1002

because starch had been successfully used in natural deodorants, even by amateur formulators making deodorants at home.[22]

CLAIM 18

"18[Pre]. A deodorant stick comprising:"

119. *See* my claim 15 analysis of ground 3.

"[18] a. at least about 25% caprylic/capric triglyceride;"

120. *See* my claim 15 analysis of ground 3.

"[18] b. a starch;"

121. *See* my claim 15 analysis of ground 3.

"[18] c. stearyl alcohol;"

122. *See* my claim 15 analysis of ground 3.

"[18] d. magnesium hydroxide;"

123. *See* my claim 15 analysis of ground 3.

"[18] e. shea butter;"

124. *See* my claim 15 analysis of ground 3.

"[18] f. coconut oil;"

125. *See* my claim 15 analysis of ground 3.

"[15] g. triethyl citrate; and"

126. *See* my claim 15 analysis of ground 3.

[22] *See* n.17.

PETITIONER DR. SQUATCH
EX. 1002

"[18] h. sunflower seed oil;"

127. *See* my claim 15 analysis of ground 3.

"[18i] said deodorant stick being free of an aluminum salt;"

128. *See* my claim 15 analysis of ground 3.

"[18j] and wherein said stick has a hardness from about 80 mm*l0 to about 140 mm*l0, as measured by penetration with ASTM D-1321 needle."

129. *See* my claim 15 analysis of ground 3.

CLAIM 19

"19[Pre]. A deodorant stick comprising:"

130. *See* my claim 15 analysis of ground 3.

"[19] a. at least about 25% of a triglyceride;"

131. *See* my claim 15 analysis of ground 3.

"[19] b. a starch;"

132. *See* my claim 15 analysis of ground 3.

"[19] c. stearyl alcohol;"

133. *See* my claim 15 analysis of ground 3.

"[19] d. magnesium hydroxide;"

134. *See* my claim 15 analysis of ground 3.

"[19] e. shea butter;"

135. *See* my claim 15 analysis of ground 3.

PETITIONER DR. SQUATCH
EX. 1002

"[19] f. coconut oil;"

136. *See* my claim 15 analysis of ground 3.

"[19] g. triethyl citrate; and"

137. *See* my claim 15 analysis of ground 3.

"[19] h. sunflower seed oil;"

138. *See* my claim 15 analysis of ground 3.

"[19i] said deodorant stick being free of an aluminum salt;"

139. *See* my claim 15 analysis of ground 3.

"[19j] and wherein said stick has a hardness from about 80 mm*l0 to about 140 mm*l0, as measured by penetration with ASTM D-1321 needle."

140. *See* my claim 15 analysis of ground 3.

XII. GROUND 4: Claim 17 is Obvious Over Lesniak in View of Phinney, Bianchi '254, Anconi, and Easy Homemade

A. Overview of the Combination

141. In my opinion, the subject matter of claim 17 would have been obvious over Lesniak in view of Phinney, Bianchi '254, Anconi, and Easy Homemade. As explained above, the combination of Lesniak, Phinney, Bianchi '254, and Anconi disclose and/or suggest all of the limitations of independent claim 15. *Supra* § XI. While Lesniak describes formulating deodorant compositions with starch such as tapioca starch, it does not expressly teach the use of arrowroot, which a POSA would

PETITIONER DR. SQUATCH
EX. 1002

have recognized as another starch. Easy Homemade[23] describes deodorant formulations that, like Lesniak's compositions as modified based on Phinney's teachings, comprise magnesium hydroxide and other ingredients of natural origin. Easy Homemade discloses the utility of arrowroot powder in such compositions. A POSA would have found it obvious to use arrowroot powder as a starch in the composition of Lesniak, as taught by Easy Homemade.

B. Rationale (Motivation) Supporting Obviousness

142. In my opinion, a POSA would have been motivated to combine Lesniak with Phinney, Bianchi '254, and Anconi for the reasons stated in Sections IX-XI. While those references do not expressly teach the usefulness of arrowroot in deodorant sticks, a POSA would have known that sweat and moisture in the axillary give rise to odor-causing bacteria and would have looked to publications in the field of deodorants describing thickeners that were effective in absorbing moisture and sweat.

143. Easy Homemade is publication in the field that describes deodorant sticks containing ingredients of natural origin, including magnesium hydroxide and arrowroot powder. Ex. 1009, 5-9. Lesniak describes using starch in its deodorant compositions (Ex. 1003, 8:31-34), and a POSA would have looked to publications

[23] The accessibility of Easy Homemade is discussed in greater detail in Ground 6.

PETITIONER DR. SQUATCH
EX. 1002

such as Easy Homemade for starches that had been used in deodorant compositions. A POSA, knowing of arrowroot's thickening and absorbing properties,[24] would have been motivated to include arrowroot powder in the Lesniak's compositions, as modified by Phinney, Bianchi '254, and Anconi, based on the teachings of Easy Homemade that arrowroot powder had been successfully formulated into deodorant sticks comprising ingredients of natural origin.

144. I have also provided a detailed explanation of the rationale (motivation) supporting obviousness in the claim mapping below.

C. Reasonable Expectation of Success

145. In my opinion, a POSA would have had a reasonable expectation of success in formulating a deodorant stick, using the teachings of Native, Bianchi '254, Easy Homemade and further adopting Easy Homemade's arrowroot powder. Arrowroot was a well-known thickening and absorbing ingredient that Easy Homemade shows could be formulated into deodorant compositions, even by amateur formulators developing deodorants for personal use at home. Ex. 1009, 5-9. Moreover, a POSA would have appreciated that deodorant compositions could be formed through various combinations of known ingredients, such as thickeners, as simple design choices.

[24] *See* Ex. 1068, 62; Ex. 1016, 5 (discussing "arrowroot powder to help keep you dry").

PETITIONER DR. SQUATCH
EX. 1002

D. Analogous Art

146. Lesniak, Phinney, Bianchi '254, Anconi, and Easy Homemade are in the same field as the '752 Patent, and all relate to personal care compositions, including deodorant and/or antiperspirant sticks.[25] *See* Ex. 1001, Abstract, 1:10-2:57, 9:65-10:4; Ex. 1003, Abstract, Title, 3:39, 4:22, 8:43-46, 9:45, 10:27; Ex. 1004, Abstract, Title, 5:52-60, 6:9-12, 6:31-34, 8:40-44; Ex. 1008, Abstract, Title, ¶¶ [0010]-[0021]; Ex. 1057, Abstract, ¶¶ [0049]-[0052]; Ex. 1009, 5-9.

E. Claim Mapping

CLAIM 17

"17. The deodorant stick of claim 15, wherein the starch is arrowroot powder."

147. In my opinion, Easy Homemade describes this element. While Lesniak, Phinney, Bianchi '254, and Anconi do not expressly teach the usefulness of arrowroot powder in a deodorant stick, Easy Homemade discloses deodorant sticks comprising arrowroot powder, which a POSA knew had thickening and absorbing properties.[26] Ex. 1009, 5-9. A POSA would have been motivated to use arrowroot powder (and had an expectation of success) since Easy Homemade indicates that it was suitable for natural compositions and could be formulated into a deodorant stick even by amateur formulators making deodorant sticks at home for personal use.

[25] *See* n.3,6.
[26] *See* n.24.

PETITIONER DR. SQUATCH
EX. 1002

XIII. GROUND 5: Claims 1, 4-14 are Obvious Over Native in view of Bianchi '254

A. Overview of the Combination

148. In my opinion, the subject matter of claims 1, and 4-14 are obvious over Native in view of Bianchi '254. Native is a printed publication from a website for the Native deodorant product, which sets forth the ingredients for a natural, aluminum-free deodorant stick, which was being marketed and sold in 2016. Ex. 1007, 5, 11. A POSA looking to formulate new deodorant compositions would have looked to existing formulations and would have understood that commercial natural deodorant brands typically provided ingredient lists of their products on their websites. Native, in particular, was a website that would have been well known to a POSA, inasmuch as Native was a well-known deodorant. Attesting to the fact that Native was a known leader in the field, Patent Owner acquired Native in 2017. *See* Ex. 1010, 3 ("Native reached internet fame"); Ex. 1011, 2-3; Ex. 1012, 1.

149. Native discloses features of deodorant stick compositions claimed in the '752 Patent; however, it does not expressly teach the percentage of each ingredient used, including the percentage of liquid triglyceride (carrier oil). Native also does not disclose the hardness of the deodorant stick. Bianchi '254 describes antiperspirant stick compositions, which establish that the claimed concentrations of ingredients were conventional and that the claimed hardness range was standard.

PETITIONER DR. SQUATCH
EX. 1002

Accordingly, it would be obvious to formulate a deodorant stick such as the stick disclosed by Native using ingredient concentrations and hardnesses as taught by Bianchi '254.

B. Rationale (Motivation) Supporting Obviousness

150. In my opinion, in making a natural, aluminum-free deodorant stick composition, a POSA would have looked to existing compositions, such as Native. Native's deodorant stick composition is comprised of caprylic/capric triglyceride, baking soda, stearyl alcohol, olyglycerol-3 beeswax, and jojoba esters. Ex. 1007, 11. Aluminum salts, and synthetic fragrances are not included in the composition. *See id.* As a POSA would have understood, Native lists its deodorant stick ingredients in order from greatest to least concentration;[27] however, it does not expressly teach the percentage of each ingredient used nor state the hardness of the deodorant stick. In the absence of express teachings on these points, a POSA would have looked to other publications in the field with suitable examples.

151. Bianchi '254 is a publication in the field which describes "fatty-alcohol containing antiperspirant stick compositions" and methods related thereto. Ex.

[27] *See* Ex. 1046, 164 ("Ingredients in the product should be listed as follows: (1) A list of each ingredient of the cosmetic product in descending order of predominance by weight (except that the fragrance and/or flavor may be designated as such without naming each individual ingredient when the manufacturer or supplier of the fragrance and/or flavor refuses to disclose ingredient data).").

PETITIONER DR. SQUATCH
EX. 1002

1008, Abstract, ¶¶[0010]-[0012], [0021]. Native's structurant—stearyl alcohol—is a fatty alcohol. Thus, Bianchi '254 would have been of particular use for a POSA looking for percentages to use for Native's formulation.

152. Bianchi '254 also describes antiperspirant sticks having, e.g., "hardness values of from 8 to 15 mm, preferably 8 to 10 mm, measured pursuant to" a test with a DIN 51-579 needle (*id.*, ¶¶ [0026], [0117]), which the '752 Patent admits is an ASTM-D 1321 needle (Ex. 1001, 11:50-65) and would have been understood by a POSA as such. When formulating a natural, aluminum-free deodorant stick based on the composition in Native, a POSA would have looked at publications describing other stick compositions, like Bianchi '254, for information regarding preferred hardnesses and amount of ingredients.

153. I have also provided a detailed explanation of the rationale (motivation) supporting obviousness in the claim mapping below.

C. Reasonable Expectation of Success

154. In my opinion, a POSA would have had a reasonable expectation of success in formulating a deodorant stick such as the stick disclosed by Native with percentages of liquid triglyceride within the claimed ranges, because others, such as the inventors of Bianchi '254, had successfully formulated antiperspirant sticks within those claimed ranges. Ex. 1008, ¶¶[0001], [0015]-[0019], [0023], [0026], [0050], [0058], [0060]-[0061], [0117], [0131], Table 5. Moreover, Native identifies

PETITIONER DR. SQUATCH
EX. 1002

the specific ingredient to use, but lacks the weight percents, where Bianchi '254 teaches the conventional weight percentages to be used for the various components such that the combination would aid the POSA in making a deodorant similar to Native's. With respect to hardness, a POSA would have had a reasonable expectation of success in achieving the same for reasons already discussed above.[28]

D. Analogous Art

155. Native and Bianchi '254 are in the same field as the '752 Patent, and all relate to personal care compositions, including deodorant and/or antiperspirant sticks.[29] *See* Ex. 1001, Abstract, 1:10-2:57, 9:65-10:4; Ex. 1007, 5-8, 11; Ex. 1008, Abstract, ¶¶[0010]-[0021].

E. Claim Mapping

CLAIM 1

"1[Pre]. A deodorant stick comprising:"

156. In my opinion, Native describes this element. In particular, Native teaches a deodorant stick.

[28] *See* n.5.
[29] *See* n.3.

PETITIONER DR. SQUATCH
EX. 1002

Ex. 1007, 11.

"[1]a. at least one antimicrobial; and"

157. In my opinion, Native describes this element. In particular, Lesniak teaches a deodorant stick comprising baking soda, which was a known antimicrobial.[30]

Ingredients

Caprylic/capric triglyceride (which is a fancy way of saying fractionated coconut oil), arrowroot powder, stearyl alcohol, baking soda, shea butter, coconut oil, hydrogenated castor oil, polyglycerol-3 beeswax (which is a fancy way of saying cera bellina wax), jojoba esters, tocopherol (which is a fancy way of saying Vitamin E), L. acidophilus (which is a natural bacteria found in your body already), dextrose, glyceryl caprylate, glyceryl undecylenate.
Our scented deodorants include oils. Lavender & Rose is made with Lavender Oil and Geranium Oil. Eucalyptus & Mint is made with Eucalyptus Oil and Spearmint Oil. Due to FDA recommendations, we use the term "fragrance" to refer to these oils.

Ex. 1007, 11.

[30] *See* Ex. 1005, 133.

PETITIONER DR. SQUATCH
EX. 1002

"[1]b. a structurant that is stearyl alcohol;"

158. In my opinion, Native describes this element. In particular, Native's deodorant stick comprised stearyl alcohol, which is a structurant, as generally known in the field.[31]

Ingredients

Caprylic/capric triglyceride (which is a fancy way of saying fractionated coconut oil), arrowroot powder, stearyl alcohol, baking soda, shea butter, coconut oil, hydrogenated castor oil, polyglycerol-3 beeswax (which is a fancy way of saying cera bellina wax), jojoba esters, tocopherol (which is a fancy way of saying Vitamin E), L. acidophilus (which is a natural bacteria found in your body already), dextrose, glyceryl caprylate, glyceryl undecylenate.
Our scented deodorants include oils. Lavender & Rose is made with Lavender Oil and Geranium Oil. Eucalyptus & Mint is made with Eucalyptus Oil and Spearmint Oil. Due to FDA recommendations, we use the term "fragrance" to refer to these oils.

Ex. 1007, 11.

"[1c] said stick being free of an aluminum salt; and"

159. In my opinion, Native describes this element. In particular, Native describes an "Aluminum Free" deodorant stick, which a POSA would have understood to mean that the formulation did not contain an aluminum salt. The listed ingredients, discussed above, confirm this.

NATIVE DEODORANT

Free Shipping | Aluminum Free | No Commitment

Ex. 1007, 11.

[31] Ex. 1008, ¶¶ [0057]-[0058].

PETITIONER DR. SQUATCH
EX. 1002

160. In addition, Native touted its "NATURAL INGREDIENTS", which a POSA would have understood to militate against inclusion of ingredients such as aluminum that were thought to be unsafe. *Id.*, 5.

> ***"[1d] said stick having a hardness from about 80 mm*10 to about 140 mm*10, as measured by penetration with ASTM D-1321 needle;"***

161. In my opinion, Native and/or Bianchi '254 describe and/or suggest this element. In particular, while Native does not state the hardness of the deodorant stick, Bianchi '254 describes that its antiperspirant sticks have "hardness values of from 8 to 15 mm, preferably 8 to 10 mm,[32] measured pursuant to" a test with a DIN 51-579 needle (Ex. 1008, ¶¶[0026], [0117]), which is an ASTM-D 1321 needle according to the '752 Patent (Ex. 1001, 11:50-65), and as would have been understood by a POSA. Ex. 1047, 8:59-9:13.

162. Bianchi '254's hardness ranges overlap with the claimed range. *See* Ex. 1008, ¶¶ [0026], [0117]. In my opinion, there was nothing critical or unexpected about the claimed range relative to Bianchi '254's ranges. As a POSA would have understood, the minor deviations in the ranges yield predictable variations in degree (softer vs. harder) and do not produce a different kind of result. Indeed, Patent Owner obtained another patent that contains many of the same limitations as the '752 Patent

[32] *See* n.1; Ex. 1047, 8:59-9:13 (discussing measuring the hardness of deodorant with a "penetration needle as specified in ASTM Method-D 1321-DIN 51 579").

PETITIONER DR. SQUATCH
EX. 1002

(and appears to claim the same priority date(s)), yet recites the about 70 mm*10 to about 140 mm*10 hardness range rather than the 80 mm*10 to about 140 mm*10. Ex. 1075, claim 8. This further suggests that there is nothing critical about the about 80 mm*10 to about 140 mm*10 range.

163. In my opinion, a POSA would have been motivated to formulate a deodorant stick, such as Lesniak's deodorant stick, to have a hardness within Bianchi '254's preferred ranges because a POSA would have (i) looked to other references for preferred hardness ranges in the absence of any explicit teaching on this point in Native and (ii) known that customers preferred hardness levels within the claimed range and the ranges stated in Bianchi '254.[33] And, in my opinion, a POSA would have had a reasonable expectation of success in doing so for reasons addressed above.

"[1e] wherein the deodorant stick is anhydrous"

164. In my opinion, Native describes and/or suggests this element. In particular, Native describes an anhydrous deodorant stick, as its ingredients do not list water. A POSA would have been motivated to formulate Native's deodorant stick as an anhydrous stick to "to ensure micro-robustness in the package and during

[33] *See* Ex. 1006, 2:56-58, 6:23-29.

PETITIONER DR. SQUATCH
EX. 1002

consumer use."[34] And a POSA would have had a reasonable expectation of success in doing so, as others had successfully formulated anhydrous deodorant sticks.[35]

"[1f] and is substantially free of silicones."

165. In my opinion, Native describes and/or suggests this element. In particular, Native describes a deodorant stick that did not contain silicones, as no silicones are listed in the ingredients.

Ingredients	Caprylic/capric triglyceride (which is a fancy way of saying fractionated coconut oil), arrowroot powder, stearyl alcohol, baking soda, shea butter, coconut oil, hydrogenated castor oil, polyglycerol-3 beeswax (which is a fancy way of saying cera bellina wax), jojoba esters, tocopherol (which is a fancy way of saying Vitamin E), L. acidophilus (which is a natural bacteria found in your body already), dextrose, glyceryl caprylate, glyceryl undecylenate. Our scented deodorants include oils. Lavender & Rose is made with Lavender Oil and Geranium Oil. Eucalyptus & Mint is made with Eucalyptus Oil and Spearmint Oil. Due to FDA recommendations, we use the term "fragrance" to refer to these oils.

Ex. 1007, 11.

166. In addition, Native touted its "NATURAL INGREDIENTS", which a POSA would have understood to exclude synthetic ingredients such as silicones. *Id*., 5.

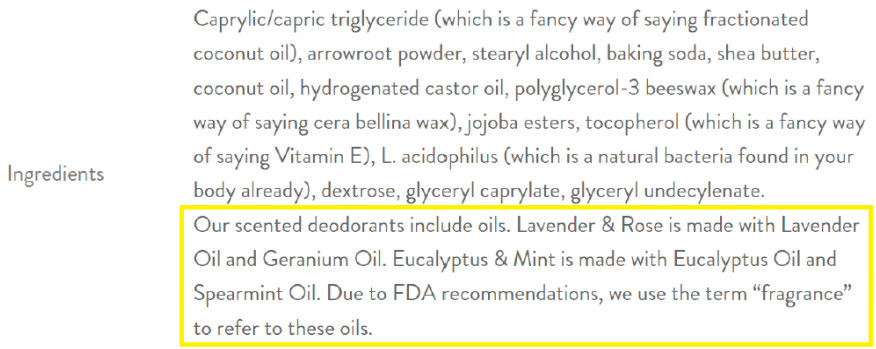
[34] Ex. 1003, Abstract, 1:16-54, 4:54-60, 5:5-54; 10:27.
[35] *See* n.34.

PETITIONER DR. SQUATCH
EX. 1002

CLAIM 4

"4. The deodorant stick of claim 1, wherein the deodorant stick is substantially free of a synthetic fragrance."

167. In my opinion, Native describes and/or suggests this element. In particular, Native discloses a deodorant stick free from synthetic fragrance, as its "fragrance" referred to natural essential oils.



Ex. 1007, 11.

168. In addition, Native touted its "NATURAL INGREDIENTS", which a POSA would have understood to exclude synthetic fragrances. *Id.*, 5.

CLAIM 5

"5. The deodorant stick of claim 1, wherein the stick comprises from about 5% to about 20% of the structurant."

169. *See* my claim 1 analysis of ground 5. In addition, Bianchi '254 singles out stearyl alcohol as a "widely used" structurant "of particular interest" for antiperspirants. Ex. 1008, ¶¶ [0001], [0058]. While Native does not state the amount of stearyl alcohol to use, Bianchi '254 teaches making antiperspirant formulations

PETITIONER DR. SQUATCH
EX. 1002

comprising 12-25% of a fatty alcohol, such as stearyl alcohol, as the structurant. *Id.*, ¶¶ [0018]-[0019], [0131] (showing formulations with 18% stearyl alcohol).

170. Thus, in my opinion, a POSA would have been motivated to use from about 8% to about 20% of a structurant such as stearyl alcohol in a deodorant stick, and would have had a reasonable expectation of success in doing so, because that amount of stearyl alcohol had already been used successfully as a structurant in deodorant and antiperspirant sticks.

171. Bianchi '254's ranges of primary structurant overlap with the claimed range. *See id.* In my opinion, there was nothing critical or unexpected about the claimed range relative to Bianchi '254's ranges. As a POSA would have understood, the minor deviations in the ranges yield predictable variations in degree and do not produce a different kind of result. For example, using less structurant generally yields a softer stick, merely changing the degree of hardness.

172. Also, I note that the '752 Patent acknowledges that a "currently marketed" product (Comparative Formula 1), which had the same nine most predominant ingredients by weight—in the same order—as the deodorant stick disclosed on the Native website, comprised 12% stearyl alcohol.

PETITIONER DR. SQUATCH
EX. 1002

	Comparative Formula 1
Hardness (Penetration mm*10)	63
Caprylic/Capric Triglyceride	34.15
Arrowroot Powder	23
Stearyl Alcohol	12
Ozokerite	
Castor Wax	3
Baking Soda	12
Magnesium Hydroxide	
Shea Butter	6
Coconut Oil	4.75
Polyglycerol-3 Beeswax	2.5
Jojoba Esters	1
70 Glyceryl Caprylate (and) Glyceryl Undecylenate	1
Perfumes	0.6
Cyclodextrin	
Tapioca Starch	

Ex. 1001, 2:58-3:35. Accordingly, in my opinion, the claimed amount of stearyl alcohol was not inventive.

CLAIM 6

"6. The deodorant stick of claim 1, further comprising a liquid triglyceride."

173. *See* my claim 9 analysis of ground 5.

CLAIM 7

"7. The deodorant stick of claim 1, further comprising caprylic/capric triglyceride."

174. *See* my claim 9 analysis of ground 5.

PETITIONER DR. SQUATCH
EX. 1002

CLAIM 8

"8. The deodorant stick of claim 1, further comprising a triglyceride."

175. *See* my claim 9 analysis of ground 5.

CLAIM 9

"9. The deodorant stick of claim 1, further comprising from about 25% to 50% of a liquid triglyceride."

176. In my opinion, Native and Bianchi '254 describe and/or suggest this element. In particular, Native describes a deodorant stick that comprised, as its first ingredient, caprylic/capric triglyceride, which the '752 Patent describes as an exemplary liquid triglyceride. Ex. 1001, 6:8-15 ("[T]he triglycerides of the present invention are liquid . . . . An example may be caprylic/capric triglyceride.")

Ingredients

Caprylic/capric triglyceride (which is a fancy way of saying fractionated coconut oil), arrowroot powder, stearyl alcohol, baking soda, shea butter, coconut oil, hydrogenated castor oil, polyglycerol-3 beeswax (which is a fancy way of saying cera bellina wax), jojoba esters, tocopherol (which is a fancy way of saying Vitamin E), L. acidophilus (which is a natural bacteria found in your body already), dextrose, glyceryl caprylate, glyceryl undecylenate.
Our scented deodorants include oils. Lavender & Rose is made with Lavender Oil and Geranium Oil. Eucalyptus & Mint is made with Eucalyptus Oil and Spearmint Oil. Due to FDA recommendations, we use the term "fragrance" to refer to these oils.

Ex. 1007, 11.

177. In my opinion, a POSA would have known that Native listed each ingredient in descending order of amount.[36] Thus, a POSA would have understood

[36] *See* n.27, above; Ex. 1046, 164.

PETITIONER DR. SQUATCH
EX. 1002

the Native deodorant stick to comprise a substantial amount of liquid triglyceride, since caprylic/capric triglyceride is the most predominant ingredient. Indeed, the '752 Patent admits that a "currently marketed" product (Comparative Formula 1), which the same nine most predominant ingredients by weight—in the same order—as the deodorant stick disclosed on the Native website, comprised 34.15% caprylic/capric triglyceride.

	Comparative Formula 1
Hardness (Penetration mm*10)	63
Caprylic/Capric Triglyceride	34.15
Arrowroot Powder	23
Stearyl Alcohol	12
Ozokerite	
Castor Wax	3
Baking Soda	12
Magnesium Hydroxide	
Shea Butter	6
Coconut Oil	4.75
Polyglycerol-3 Beeswax	2.5
Jojoba Esters	1
70	
Glyceryl Caprylate (and) Glyceryl Undecylenate	1
Perfumes	0.6
Cyclodextrin	
Tapioca Starch	

Ex. 1001, 2:58-3:35.

178. Regardless of this acknowledgement that using the claimed amount was not inventive, it was well known that deodorants typically comprised from about 25% to 50% of a carrier oil component such as liquid triglyceride. Specifically,

PETITIONER DR. SQUATCH
EX. 1002

Bianchi ’254 describes an antiperspirant stick with 40-80% oil. In Bianchi ’254, part of the oil carrier (20-40% of the total) is a natural oil such as a liquid triglyceride. Ex. 1008, ¶¶ [0017], [0050]. Bianchi ’254 also describes that the antiperspirant stick further comprised 20-40% of silicone oil. *Id.*, ¶ [0016]. A POSA would have understood that silicone oil and liquid triglyceride both functioned as “carrier oils” that, among other things, solubilize and disperse other ingredients (*id.*, ¶¶ [0015], [0023], cl. 17, 18), and therefore would have been motivated to use even more liquid triglyceride when formulating a natural deodorant stick (like in Native) that did not include, e.g., silicone oil, to meet what the ’752 Patent admits was an existing consumer preference (Ex. 1001, 1:10-24).

179. Thus, in my opinion, a POSA would have been motivated to use from about 25% to 50% of a liquid triglyceride in a deodorant stick, and would have had a reasonable expectation of success in doing so, inasmuch as (i) Bianchi ’254 already suggests the same with its 20-40% amount, (ii) a POSA would have, based on Bianchi ’254’s overall oil teachings, used even more of the liquid triglyceride when making a stick with only that oil carrier (as taught by Native).

180. Bianchi ’254’s ranges of liquid triglyceride overlap with the claimed range. Ex. 1008, ¶¶ [0017], [0050]. In my opinion, there was nothing critical or unexpected about the claimed range relative to Bianchi ’254’s ranges. As a POSA would have understood, the minor deviations in the ranges yield predictable

PETITIONER DR. SQUATCH
EX. 1002

variations in degree and do not produce a different kind of result. For example, using more liquid triglyceride generally yields a softer stick, merely changing the degree of hardness.

CLAIM 10

"10. The deodorant stick of claim 1, further comprising from about 25% to 50% of caprylic/capric triglyceride."

181. *See* my claim 9 analysis of ground 5.

CLAIM 11

"11. The deodorant stick of claim 1, further comprising from about 25% to 46.9% of a liquid triglyceride."

182. *See* my claim 9 analysis of ground 5.

CLAIM 12

"12. The deodorant stick of claim 1, further comprising from about 25% to 46.9% of caprylic/capric triglyceride."

183. *See* my claim 9 analysis of ground 5.

CLAIM 13

"13. The deodorant stick of claim 1, further comprising from about 25% to 42.7% of a liquid triglyceride."

184. *See* my claim 9 analysis of ground 5.

PETITIONER DR. SQUATCH
EX. 1002

CLAIM 14

"14. The deodorant stick of claim 1, wherein the at least one antimicrobial is selected from the group consisting of baking soda, magnesium hydroxide, hexamidine, magnesium carbonate, zinc carbonate, thymol, magnesium hydroxide & magnesium carbonate hydroxide, sodium carbonate, magnesium carbonate hydroxide, partially carbonated magnesium hydroxide, calcium carbonate, polyvinyl formate, salycilic acid, niacinamide, cinnamon essential oil, cinnamon bark essential oil, cinnamic aldehyde and combinations thereof."

185. *See* my claim 1 analysis of ground 5.

XIV. GROUND 6: Claims 2-3 are Obvious Over Native in view of Bianchi '254 and Easy Homemade

A. Overview of the Combination

186. In my opinion, the subject matter of claims 2-3 are obvious over Native in view of Bianchi '254 and Easy Homemade. As explained above, Native in view of Bianchi '254 renders obvious all of the limitations of independent claim 1. *Supra* § XIII. While Native teaches a deodorant stick composition comprising an antimicrobial, it does not teach a deodorant stick composition (1) substantially free of baking soda (Native's antimicrobial); or (2) comprising an antimicrobial with a water solubility of at most about 90 g/L at 25°C. A POSA would have known, however, that deodorants containing baking soda (Native's antimicrobial) could cause skin irritation for some users (or at the very least the alternative was a preference for some consumers). Ex. 1009, 6. Easy Homemade explains that

PETITIONER DR. SQUATCH
EX. 1002

magnesium hydroxide, which a POSA would have known has a water solubility below 90 g/L at 25°C,[37] could be used to replace baking soda as an antimicrobial in deodorant compositions, and it works just as well. *Id.*, 6, 9. Accordingly, it would be obvious to use magnesium hydroxide as a substitute to baking soda in the composition of Native, as taught by Easy Homemade, or to reduce the amount of baking soda in Native's composition.

187. Easy Homemade is a printed publication from a website dedicated to natural deodorant formulations. It describes a successful strategy that had been implemented by an independent formulator to avoid the possible skin irritation caused by baking soda. A POSA seeking a solution to that problem would have known there were dedicated online resources in which independent formulators shared suitable ingredient for and methods of formulating natural deodorants, making Easy Homemade relevant. Furthermore, a POSA would have appreciated that such websites from independent formulators striving for more natural options presented an indication of consumer preferences, which a POSA would desire to meet in formulating new commercial products. Easy Homemade was widely accessible, being part of a series of related "Soap Deli News" articles dedicated to

[37] *See* n.39.

PETITIONER DR. SQUATCH
EX. 1002

deodorant formulations with significant engagement from individuals globally. *See generally* Ex. 1009; Ex. 1016; Ex. 1017; Ex. 1018.

B. Rationale (Motivation) Supporting Obviousness

188. In my opinion, it would have been obvious to use the teachings of Bianchi '254 and Easy Homemade in Native's deodorant stick composition. A POSA would have been motivated to combine Native and Bianchi '254 for the reasons stated in Section XIII.

189. It also would have been obvious to apply the teachings of Easy Homemade to Native's deodorant stick composition. While Native teaches a deodorant stick composition comprising an antimicrobial (baking soda), a POSA would have known that deodorants containing baking soda could cause skin irritation for some users. A POSA would have looked to publications in the field of deodorants describing natural antimicrobials that were not known to cause skin irritation, and would seek to understand consumer demands in the field (not being suitably met by existing offerings) for guidance on new products. Easy Homemade is a publicly-available website page that sets forth the ingredients for and method of making a natural deodorant. Ex. 1009, 5-9. Easy Homemade confirms what a POSA would have known—namely, that magnesium hydroxide could be used to replace baking soda as an antimicrobial in deodorant compositions, and it works just as well. *Id.*, 6, 9.

PETITIONER DR. SQUATCH
EX. 1002

190. I have also provided a detailed explanation of the rationale (motivation) supporting obviousness in the claim mapping below.

C. Reasonable Expectation of Success

191. In my opinion, a POSA would have also had a reasonable expectation of success in formulating Native's deodorant stick based on Bianchi '254 using Easy Homemade's magnesium hydroxide antimicrobial as an alternative, or in addition, to baking soda. In particular, Easy Homemade shows that the simple substitution was achievable even by amateur formulators making deodorants at home (with less skill than a POSA). Ex. 1009, 6, 9.

192. A POSA would have appreciated that deodorant compositions could be formed through various combinations of known ingredients, such as antimicrobials, structurants, and carrier oils, as simple design choices.

D. Analogous Art

193. Native, Bianchi '254, and Easy Homemade are in the same field as the '752 Patent, and all relate to personal care compositions, including deodorant and/or antiperspirant sticks.[38] *See* Ex. 1001, Abstract, 1:10-2:57, 9:65-10:4; Ex. 1007, 5-8, 11; Ex. 1008, Abstract, ¶¶[0010]-[0021]; Ex. 1009, 5-9.

[38] *See* n.3.

PETITIONER DR. SQUATCH
EX. 1002

E. Claim Mapping

CLAIM 2

"2. The deodorant stick of claim 1, wherein the antimicrobial is a powder with a water solubility of at most about 90 g/L at 25° C."

194. In my opinion, Native and Easy Homemade describe and/or suggest this element. In particular, Native teaches a deodorant stick composition comprising baking soda. A POSA would have known that deodorants containing baking soda could cause skin irritation for some users. Easy Homemade discloses the substitution of magnesium hydroxide powder as a non-skin irritating antimicrobial substitute for baking soda in deodorant sticks. Ex. 1009, 6 ("I fell victim to the . . . rash you get after using deodorant with baking soda. Eventually I discovered that I could swap the baking soda with magnesium hydroxide . . . and it worked just as well."). As a POSA would have known, magnesium hydroxide is a powder with a water solubility of at most 90 g/L at 25°C.[39]

CLAIM 3

"3. The deodorant stick of claim 1, wherein the deodorant stick is substantially free of baking soda."

195. *See* my claim 2 analysis of ground 6.

[39] *See* Ex. 1042, 14, 39 (indicating the aqueous solubility of magnesium hydroxide is 0.00125 g/100 mL, which is equivalent to 0.0125 g/L); Ex. 1050, 395 ("Magnesium hydroxide is a white, nearly insoluble powder."); Ex. 1001, 8:5-25.

PETITIONER DR. SQUATCH
EX. 1002

XV. GROUND 7: Claims 15 and 17-19 are Obvious Over Native in view of Bianchi '254, Easy Homemade, Anconi, and Stoia

A. Overview of the Combination

196. In my opinion, the subject matter of claims 15 and 17-19 are obvious over Native in view of Bianchi '254, Easy Homemade, Anconi, and Stoia. While Native teaches a deodorant stick composition comprising an antimicrobial and various plant compounds, it does not teach a deodorant stick comprising (1) triethyl citrate; or (2) sunflower seed oil. But a POSA would have found it obvious to use these compounds in Native's deodorant based on Anconi and Stoia.

B. Rationale (Motivation) Supporting Obviousness

197. In my opinion, it would have been obvious to use the teachings of Bianchi '254, Easy Homemade, Anconi, and Stoia in Native's deodorant stick composition. A POSA would have been motivated to combine Native, Bianchi '254, and Easy Homemade for the reasons stated in Sections XIII-XIV.

198. Native discloses the use of baking soda as an antimicrobial in its deodorant compositions. As discussed above, baking soda was thought to cause skin irritation in some users. Anconi discloses triethyl citrate as an "ingredient[] known to have antibacterial and deodorant properties." Ex. 1057, ¶ [0027]. Accordingly, a POSA would have been motivated to incorporate triethyl citrate as an antimicrobial in Native's deodorant compositions to improve their ability to combat odor after

PETITIONER DR. SQUATCH
EX. 1002

reducing or eliminating the baking soda in the formulation to avoid skin irritation issues. A POSA further would have been motivated to include triethyl citrate in Native's deodorant compositions because, as discussed above, Native's compositions contained liquid triglycerides, and triethyl citrate was known to prevent the degradation of triglycerides in compositions for topical use.[40]

199. Native also discloses the use of tocopherol (Vitamin E) and various plant oils or plant oil-derived compounds in a deodorant stick. Stoia teaches that tocopherols are "abundant in sunflower seeds" and have antioxidant properties. Ex. 1058, 45. Stoia further describes the use of sunflower seed oil as an emollient in cosmetic compositions, characterizing it as "an effective, low-cost, and natural alternative" with "proven certain positive skin effects." *Id.* A POSA therefore would have been motivated to include sunflower seed oil in Native's deodorant stick for its emollient properties and association with "positive skin effects."

200. I have also provided a detailed explanation of the rationale (motivation) supporting obviousness in the claim mapping below.

C. Reasonable Expectation of Success

201. In my opinion, a POSA would have had a reasonable expectation of success in formulating Native's deodorant stick based on Bianchi '254 using Easy

[40] *See* n.14.

PETITIONER DR. SQUATCH
EX. 1002

Homemade's magnesium hydroxide antimicrobial as an alternative to baking soda for the reasons discussed above. And a POSA would have had a reasonable expectation of success in using triethyl citrate as an antimicrobial in Native's compositions because Anconi describes its successful use as an antimicrobial in deodorants, and others had successfully formulated compositions for topical application using triethyl citrate to prevent the degradation of triglycerides. Moreover, a POSA would have had a reasonable expectation of success in using sunflower seed oil as an emollient in Native's deodorant stick based on Stoia because Native's stick already contained plant oil or plant oil-derived emollients, such as coconut oil, which could simply be reduced if necessary to balance the desired structural characteristics of the stick while maintaining or enhancing its emollient effect.

202. Finally, a POSA would have appreciated that deodorant compositions could be formed through various combinations of known ingredients, such as antimicrobials, emollients, and structurants as simple design choices with predictable results.

D. Analogous Art

203. Native, Bianchi '254, Easy Homemade, Anconi, and Stoia are in the same field as the '752 Patent, and all relate to personal care compositions, including

PETITIONER DR. SQUATCH
EX. 1002

deodorants and/or antiperspirants.[41] *See* Ex. 1001, Abstract, 1:10-2:57, 9:65-10:4; Ex. 1007, 5-8, 11; Ex. 1008, Abstract, ¶¶ [0010]-[0021]; Ex. 1009, 5-9; Ex. 1057, Title, Abstract, [0001]-[0011], [0038], [0049]; Ex. 1058, 45-47.

CLAIM 15

"15[Pre]. A deodorant stick comprising:"

204. *See* my claim 1 analysis of ground 5.

"[15] a. at least about 25% by weight liquid triglyceride;"

205. *See* my claim 9 analysis of ground 5.

"[15] b. a starch;"

206. In my opinion, Native describes this element. In particular, Native discloses a deodorant stick that comprised arrowroot powder, which, as a POSA would have known, is a starch.[42]

Ingredients

Caprylic/capric triglyceride (which is a fancy way of saying fractionated coconut oil) arrowroot powder, stearyl alcohol, baking soda, shea butter, coconut oil, hydrogenated castor oil, polyglycerol-3 beeswax (which is a fancy way of saying cera bellina wax), jojoba esters, tocopherol (which is a fancy way of saying Vitamin E), L. acidophilus (which is a natural bacteria found in your body already), dextrose, glyceryl caprylate, glyceryl undecylenate.
Our scented deodorants include oils. Lavender & Rose is made with Lavender Oil and Geranium Oil. Eucalyptus & Mint is made with Eucalyptus Oil and Spearmint Oil. Due to FDA recommendations, we use the term "fragrance" to refer to these oils.

Ex. 1007, 11.

[41] *See* n.3.
[42] *See* Ex. 1068, 62.

PETITIONER DR. SQUATCH
EX. 1002

"[15] c. stearyl alcohol;"

207. *See* my claim 1 analysis of ground 5.

"[15] d. magnesium hydroxide;"

208. *See* my claim 2 analysis of ground 6.

"[15] e. shea butter;"

209. In my opinion, Native describes this element. In particular, Native discloses a deodorant stick that comprised shea butter.

Ingredients

Caprylic/capric triglyceride (which is a fancy way of saying fractionated coconut oil), arrowroot powder, stearyl alcohol, baking soda, shea butter, coconut oil, hydrogenated castor oil, polyglycerol-3 beeswax (which is a fancy way of saying cera bellina wax), jojoba esters, tocopherol (which is a fancy way of saying Vitamin E), L. acidophilus (which is a natural bacteria found in your body already), dextrose, glyceryl caprylate, glyceryl undecylenate.
Our scented deodorants include oils. Lavender & Rose is made with Lavender Oil and Geranium Oil. Eucalyptus & Mint is made with Eucalyptus Oil and Spearmint Oil. Due to FDA recommendations, we use the term "fragrance" to refer to these oils.

Ex. 1007, 11.

"[15] f. coconut oil;"

210. In my opinion, Native describes this element. In particular, Native discloses a deodorant stick that comprised coconut oil.

Ingredients

Caprylic/capric triglyceride (which is a fancy way of saying fractionated coconut oil), arrowroot powder, stearyl alcohol, baking soda, shea butter, coconut oil, hydrogenated castor oil, polyglycerol-3 beeswax (which is a fancy way of saying cera bellina wax), jojoba esters, tocopherol (which is a fancy way of saying Vitamin E), L. acidophilus (which is a natural bacteria found in your body already), dextrose, glyceryl caprylate, glyceryl undecylenate.
Our scented deodorants include oils. Lavender & Rose is made with Lavender Oil and Geranium Oil. Eucalyptus & Mint is made with Eucalyptus Oil and Spearmint Oil. Due to FDA recommendations, we use the term "fragrance" to refer to these oils.

PETITIONER DR. SQUATCH
EX. 1002

Ex. 1007, 11.

"[15] g. triethyl citrate; and"

211. In my opinion, Native and Anconi describe and/or suggest this element. In particular, Native describes using baking soda in its deodorant compositions. As discussed above, baking soda was thought to cause skin irritation. Anconi discloses triethyl citrate as an "ingredient[] known to have antibacterial and deodorant properties." Ex. 1057, ¶[0027]. Accordingly, a POSA would have been motivated to incorporate triethyl citrate as an antimicrobial in Native's deodorant compositions, and would have had a reasonable expectation of success in doing so, to improve their ability to combat odor, after replacing or reducing baking soda to avoid skin irritation. A POSA further would have been motivated to include triethyl citrate in Native's deodorant compositions because, as discussed above, those compositions contained liquid triglyceride, and triethyl citrate was known to prevent the degradation of triglycerides in compositions for topical use.[43]

"[15] h. sunflower seed oil;"

212. In my opinion, Native and Stoia describe and/or suggest this element. In particular, Native describes a deodorant stick comprising various plant oils and tocopherol, which is abundant in sunflower seed oil. Ex. 1058, 45. Stoia discloses the "proven . . . positive skin effects" of sunflower seed oil in cosmetic compositions.

[43] *See* n.14.

PETITIONER DR. SQUATCH
EX. 1002

Id. A POSA therefore would have been motivated to include sunflower oil in Native's deodorant sticks, and would have had a reasonable expectation of success in doing so, in view of its known emollient properties and association with proven positive skin effects.

"[15i] said deodorant stick being free of an aluminum salt;"

213. *See* my claim 1 analysis of ground 5.

"[15j] and wherein said stick has a hardness from about 80 mm*l0 to about 140 mm*l0, as measured by penetration with ASTM D-1321 needle."

214. *See* my claim 1 analysis of ground 5.

CLAIM 17

"17. The deodorant stick of claim 15, wherein the starch is arrowroot powder."

215. *See* my claim 15 analysis of ground 5.

CLAIM 18

"18[Pre]. A deodorant stick comprising:"

216. *See* my claim 15 analysis of ground 7.

"[18] a. at least about 25% caprylic/capric triglyceride;"

217. *See* my claim 15 analysis of ground 7.

"[18] b. a starch;"

218. *See* my claim 15 analysis of ground 7.

PETITIONER DR. SQUATCH
EX. 1002

"[18] c. stearyl alcohol;"

219. *See* my claim 15 analysis of ground 7.

"[18] d. magnesium hydroxide;"

220. *See* my claim 15 analysis of ground 7.

"[18] e. shea butter;"

221. *See* my claim 15 analysis of ground 7.

"[18] f. coconut oil;"

222. *See* my claim 15 analysis of ground 7.

"[15] g. triethyl citrate; and"

223. *See* my claim 15 analysis of ground 7.

"[18] h. sunflower seed oil;"

224. *See* my claim 15 analysis of ground 7.

"[18i] said deodorant stick being free of an aluminum salt;"

225. *See* my claim 15 analysis of ground 7.

"[18j] and wherein said stick has a hardness from about 80 mm*l0 to about 140 mm*l0, as measured by penetration with ASTM D-1321 needle."

226. *See* my claim 15 analysis of ground 7.

CLAIM 19

"19[Pre]. A deodorant stick comprising:"

227. *See* my claim 15 analysis of ground 7.

PETITIONER DR. SQUATCH
EX. 1002

"[19] a. at least about 25% of a triglyceride;"

228. *See* my claim 15 analysis of ground 7.

"[19] b. a starch;"

229. *See* my claim 15 analysis of ground 7.

"[19] c. stearyl alcohol;"

230. *See* my claim 15 analysis of ground 7.

"[19] d. magnesium hydroxide;"

231. *See* my claim 15 analysis of ground 7.

"[19] e. shea butter;"

232. *See* my claim 15 analysis of ground 7.

"[19] f. coconut oil;"

233. *See* my claim 15 analysis of ground 7.

"[19] g. triethyl citrate; and"

234. *See* my claim 15 analysis of ground 7.

"[19] h. sunflower seed oil;"

235. *See* my claim 15 analysis of ground 7.

"[19i] said deodorant stick being free of an aluminum salt;"

236. *See* my claim 15 analysis of ground 7.

"[19j] and wherein said stick has a hardness from about 80 mm*l0 to about 140 mm*l0, as measured by penetration with ASTM D-1321 needle."

237. *See* my claim 15 analysis of ground 7.

PETITIONER DR. SQUATCH
EX. 1002

XVI. GROUND 8: Claim 16 is Obvious Over Native in View of Bianchi '254, Easy Homemade, Anconi, Stoia, and Millet

A. Overview of the Combination

238. In my opinion, the subject matter of claim 16 is obvious over Native in view of Bianchi '254, Easy Homemade, Anconi, Stoia, and Millet. As explained above, Native in view of Bianchi '254, Easy Homemade, Anconi, and Stoia renders obvious all of the limitations of independent claim 15. *Supra* § XV. Those references do not expressly teach the usefulness of tapioca starch in deodorant sticks. A POSA would have known that sweat and moisture in the axillary could give rise to malodor via growth of odor-causing bacteria and would have would have looked for natural fillers that were effective in absorbing sweat and moisture. Millet teaches starch is an effective filler in deodorants capable of absorbing sweat and moisture, and that tapioca starch is specifically preferred. Ex. 1044, ¶¶ [0038]-[0039], [0042]. Accordingly, it would have been obvious to use tapioca starch in the Native deodorant stick, as taught by Millet.

B. Rationale (Motivation) Supporting Obviousness

239. In my opinion, it would have been obvious to use the teachings of Bianchi '254, Easy Homemade, Anconi, Stoia, and Millet in Native's deodorant stick composition. A POSA would have been motivated to combine Native, Bianchi '254, Easy Homemade, Anconi, and Stoia for the reasons stated in Sections XIII-

PETITIONER DR. SQUATCH
EX. 1002

XV. While Native, Bianchi '254, and Easy Homemade do not expressly teach the usefulness of tapioca starch in deodorant sticks, a POSA would have known that sweat and moisture in the axillary give rise to odor-causing bacteria and would have looked to publications in the field of deodorants describing natural fillers that were effective in absorbing moisture and sweat.

240. Millet is publication in the field that describes anhydrous deodorant sticks containing ingredients of natural origin. Ex. 1044, ¶ [0004]. Millet states its compositions provide a "soft texture" and are effective against "perspiration odors." *Id.* It explains that starch can be used advantageously as a filler to absorb moisture and sweat in deodorants, and that tapioca starch is specifically preferred. *Id.*, ¶¶ [0038]-[0039], [0042]. Accordingly, a POSA would have looked to Millet to find effective fillers like tapioca starch, particularly where the known improvement was known to maintain a natural composition effective against "perspiration odors" and provide a "soft texture."

241. I have also provided a detailed explanation of the rationale (motivation) supporting obviousness in the claim mapping below.

C. Reasonable Expectation of Success

242. In my opinion, a POSA would have had a reasonable expectation of success in formulating a deodorant stick, using the teachings of Native, Bianchi '254, Easy Homemade, Anconi, Stoia, and further adopting Millet's tapioca starch.

PETITIONER DR. SQUATCH
EX. 1002

Millet shows that starch was a well-known filler ingredient capable of absorbing sweat and moisture, and that tapioca starch was preferred. Ex. 1044, ¶¶ [0038]-[0042], [0048]-[0050]. Moreover, a POSA would have appreciated that deodorant compositions could be formed through various combinations of known ingredients, such as fillers, as simple design choices.

D. Analogous Art

243. Native, Bianchi '254, Easy Homemade, Anconi, Stoia, and Millet are in the same field as the '752 Patent, and all five relate to personal care compositions, including deodorants and/or antiperspirants.[44] *See* Ex. 1001, Abstract, 1:10-2:57, 9:65-10:4; Ex. 1007, 5-8, 11; Ex. 1008, Abstract, ¶¶ [0010]-[0021]; Ex. 1009, 5-9; Ex. 1044, Abstract, ¶¶ [0001]-[0003]; Ex. 1057, Title, Abstract, ¶¶ [0001]-[0011], [0038], [0049]; Ex. 1058, 45-47.

E. Claim Mapping

CLAIM 16

"16. The deodorant stick of claim 15, wherein the starch is tapioca starch."

244. In my opinion, the combination of Native in view of Bianchi '254, Easy Homemade, Anconi, Stoia, and Millet renders claim 16 obvious. Neither Native, Bianchi '254, Easy Homemade, Anconi, or Stoia expressly teach the usefulness of

[44] *See* n.3.

PETITIONER DR. SQUATCH
EX. 1002

tapioca starch in a deodorant stick. Millet discloses deodorant sticks comprising starch as a filler capable of absorbing moisture and sweat, and describes tapioca starch as preferred. Ex. 1044, ¶¶ [0002], [0038]-[0039], [0042], [0048], [0050]. A POSA would have been motivated to use tapioca starch as a filler (and had an expectation of success) since Millet indicated that it was suitable for natural compositions having a "soft texture" and which were also effective against "perspiration odors." *Id.*

XVII. GROUND 9: Claims 15-19 are Obvious Over Squatch in View of Sturgis

A. Overview of the Combination

245. Ground 9 relies on the priority date challenge set forth in Section VII above, namely, that claims 15-19 are not entitled to a priority date before the November 3, 2022 filing of the '752 Patent.

246. In my opinion, Squatch in view of Sturgis renders obvious claims 15-19. Squatch is a website excerpt disclosing known aluminum-free deodorant formulations that comprise caprylic/capric triglyceride, arrowroot powder, stearyl alcohol, and magnesium hydroxide. Squatch published on a well-known website, which received over 12.5 million views in November 2020. Ex. 1059, 2-5, 11, 13. A POSA looking to formulate new deodorant compositions would have looked to existing formulations and would have understood that commercial deodorant brands

PETITIONER DR. SQUATCH
EX. 1002

typically provided ingredient lists of their products on their websites. Squatch, in particular, was a website that would have been well known to a POSA, inasmuch as Dr. Squatch was a well-known personal care company. *Id.*

247. Sturgis is an application with the same disclosure as the '752 Patent. Because claims 15-19 are not entitled to a priority date before the November 3, 2022, filing date, Sturgis is prior art. *Indivior UK Ltd. v. Dr. Reddy's Labys S.A.*, 18 F.4th 1323, 1325 (Fed. Cir. 2021) (invalidating claims of continuation patent based on priority application's failure to provide written description support for those claims).

248. While Squatch describes a deodorant stick comprising ingredients recited in claims 15-19, it does not disclose the quantitative amounts of those ingredients. A POSA therefore would have looked to Sturgis for guidance on the amounts of ingredients when formulating an aluminum-free deodorant stick such as Squatch's deodorant stick. And Sturgis discloses the same amount of liquid triglyceride recited in claims 15-19.

B. Rationale (Motivation) Supporting Obviousness

249. In my opinion, a POSA would have looked to Squatch for the same reasons a POSA would have looked to Native, as Squatch similarly provided ingredients in order of predominance for a known deodorant stick. And a POSA would have combined Squatch with Sturgis for the same reasons the POSA would have combined Native with Bianchi '254; Sturgis, unlike Squatch, teaches the

PETITIONER DR. SQUATCH
EX. 1002

quantitative concentrations of ingredients such as the caprylic/capric triglyceride included in Squatch's deodorant at undisclosed concentrations.

250. I have also provided a detailed explanation of the rationale (motivation) supporting obviousness in the claim mapping below.

C. Reasonable Expectation of Success

251. In my opinion, a POSA would have had a reasonable expectation of success in formulating Squatch's deodorant stick based on Sturgis for the same reasons discussed above with respect to Native and Bianchi '254; Sturgis teaches the conventional weight percentages to be used for the liquid triglyceride component of Squatch's deodorant stick such that the combination would aid the POSA in making a deodorant similar to Squatch's.

252. Moreover, a POSA would have appreciated that deodorant compositions could be formed through various combinations of known ingredients, such as antimicrobials, emollients and structurants, as simple design choices.

D. Analogous Art

253. Squatch and Sturgis are in the same field as the '752 Patent, and all relate to personal care compositions, including deodorant sticks. *See* Ex. 1001, Abstract, 1:10-2:57, 9:65-10:4; Ex. 1059, 2-4, 7-9; Ex. 1056, Abstract, ¶¶ [0002]-[0005], [0026], [0043].

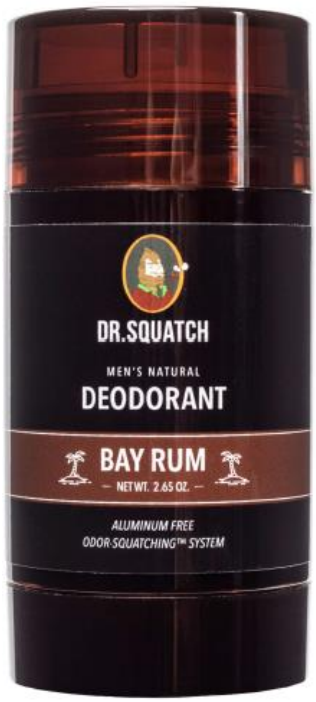
PETITIONER DR. SQUATCH
EX. 1002

E. Claim Mapping

CLAIM 15

"15[Pre]. A deodorant stick comprising:"

254. In my opinion, Squatch describes this element. In particular, Squatch describes and depicts a deodorant stick.

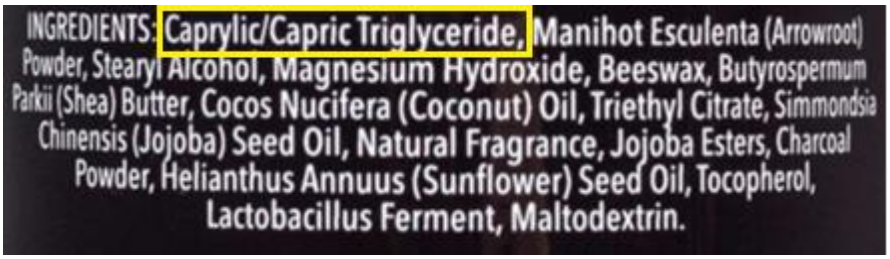


Ex. 1059, 8.

"[15] a. at least about 25% by weight liquid triglyceride;"

255. In my opinion, Squatch and Sturgis describe this element. In particular, Squatch describes a deodorant stick that comprised, as its first and thus most predominant ingredient, caprylic/capric triglyceride, which the '752 Patent describes as an exemplary liquid triglyceride. Ex. 1001, 6:8-15.

PETITIONER DR. SQUATCH
EX. 1002

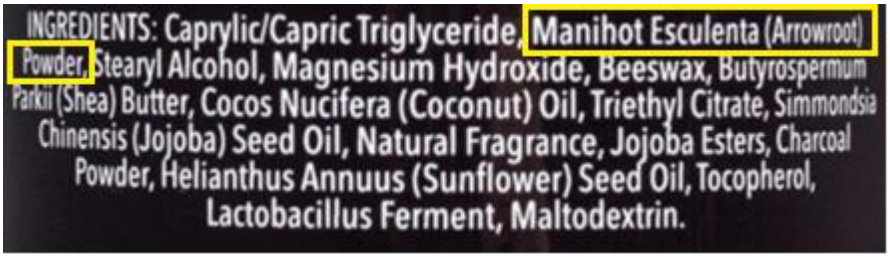


Ex. 1059, 8.

256. Because Squatch describes the use of liquid triglyceride but does not specifically state what percentage to use, a POSA would have looked to guidance in the field. Sturgis provides such guidance and establishes that using at least about 25% was a known option that a POSA would have understood could be relied upon to supplement the information from Squatch. Ex. 1056, ¶¶ [0042]-[0043].

"[15] b. a starch;"

257. In my opinion, Squatch describes this element. In particular, Squatch discloses a deodorant stick that comprised arrowroot powder, which, as a POSA would have known, is a starch.[45]



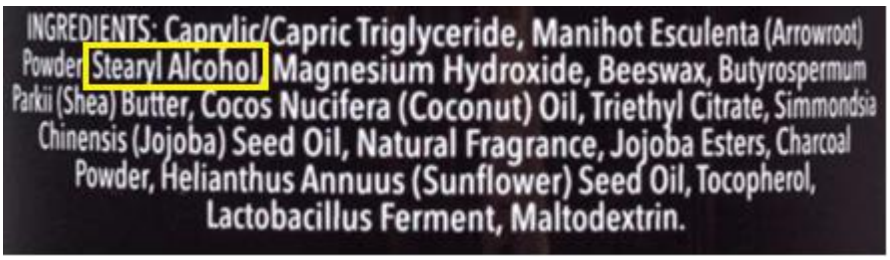
Ex. 1059, 8.

[45] *See* Ex. 1068, 62.

PETITIONER DR. SQUATCH
EX. 1002

"[15] c. stearyl alcohol;"

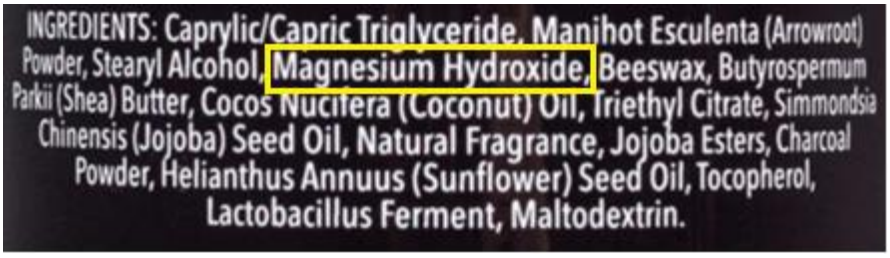
258. In my opinion, Squatch describes this element. In particular, Squatch discloses a deodorant stick that comprised stearyl alcohol.



Ex. 1059, 8.

"[15] d. magnesium hydroxide;"

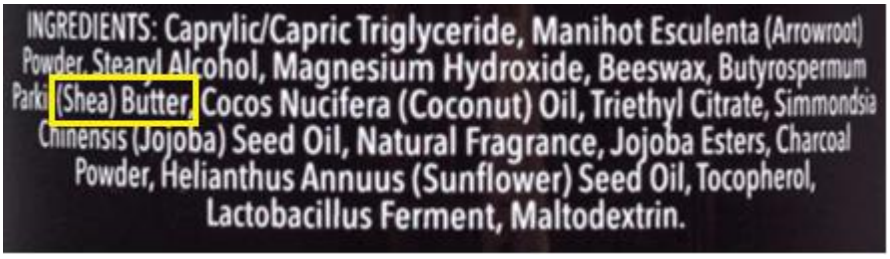
259. In my opinion, Squatch describes this element. In particular, Squatch discloses a deodorant stick that comprised magnesium hydroxide.



Ex. 1059, 8.

"[15] e. shea butter;"

260. In my opinion, Squatch describes this element. In particular, Squatch discloses a deodorant stick that comprised shea butter.

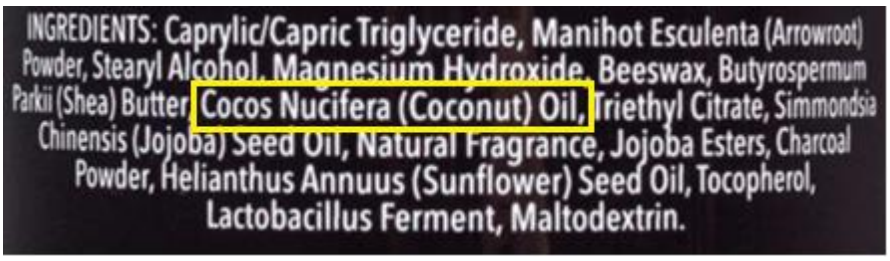


PETITIONER DR. SQUATCH
EX. 1002

Ex. 1059, 8.

"[15] f. coconut oil;"

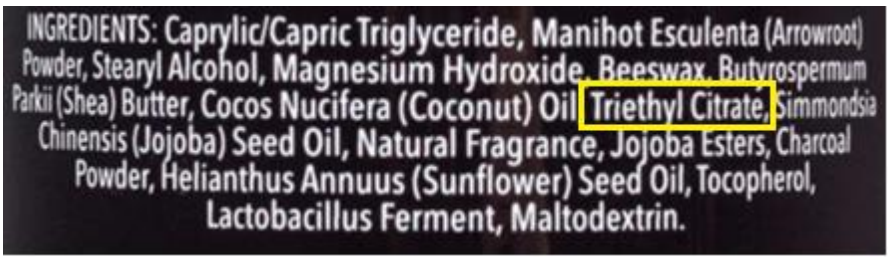
261. In my opinion, Squatch describes this element. In particular, Squatch discloses a deodorant stick that comprised coconut oil.



Ex. 1059, 8.

"[15] g. triethyl citrate; and"

262. In my opinion, Squatch describes this element. In particular, Squatch discloses a deodorant stick that comprised triethyl citrate.

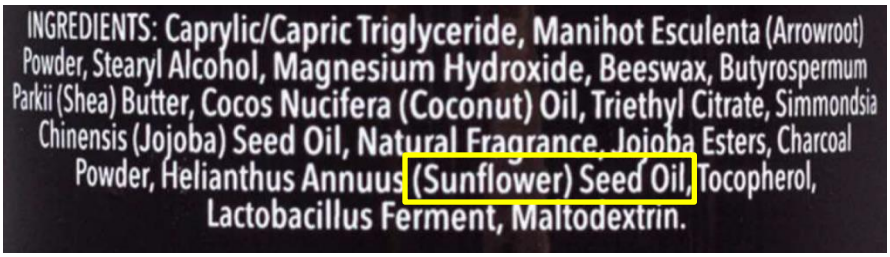


Ex. 1059, 8.

"[15] h. sunflower seed oil;"

263. In my opinion, Squatch describes this element. In particular, Squatch discloses a deodorant stick that comprised sunflower seed oil.

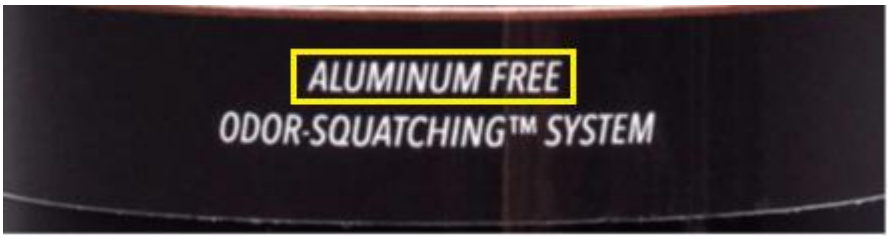
PETITIONER DR. SQUATCH
EX. 1002



Ex. 1059, 8.

"[15i] said deodorant stick being free of an aluminum salt;"

264. In my opinion, Squatch describes this element. In particular, Squatch discloses a deodorant stick that is free of an aluminum salt.



Ex. 1059, 8.

"[15j] and wherein said stick has a hardness from about 80 mm*l0 to about 140 mm*l0, as measured by penetration with ASTM D-1321 needle."

265. In my opinion Sturgis describes this element. While Squatch does not state the hardness of the deodorant stick, Sturgis describes that its deodorant sticks having hardnesses from about 80 mm*10 to about 140 mm*10, as measured by penetration with ASTM D-1321 needle, "offer[] a pleasant consumer experience." Ex. 1073, ¶¶ [0005], [0024]. A POSA therefore would have been motivated to formulate a deodorant stick, such as Squatch's deodorant stick, to have a hardness

PETITIONER DR. SQUATCH
EX. 1002

within that preferred range. And a POSA would have had a reasonable expectation of success in doing so for reasons addressed above with respect to Native and Bianchi '254.

CLAIM 16

"16. The deodorant stick of claim 15, wherein the starch is tapioca starch."

266. In my opinion, Sturgis describes this element. While Squatch uses arrowroot powder as a starch, Sturgis teaches that tapioca starch can be used interchangeably with arrowroot powder in deodorant sticks. Ex. 1073, ¶ [0065], Table 1. A POSA would have been motivated to include tapioca starch in Sturgis's deodorant compositions, and would have had a reasonable expectation of success in doing so, "for dry feel or wetness absorption." *Id.* Moreover, a POSA would have appreciated that deodorant compositions could be formed through various combinations of known ingredients, such as starches, as simple design choices.

CLAIM 17

"17. The deodorant stick of claim 15, wherein the starch is arrowroot powder."

267. *See* my claim 15 analysis of ground 9.

CLAIM 18

"18[Pre]. A deodorant stick comprising:"

268. *See* my claim 15 analysis of ground 9.

PETITIONER DR. SQUATCH
EX. 1002

"[18] a. at least about 25% caprylic/capric triglyceride;"

269. *See* my claim 15 analysis of ground 9.

"[18] b. a starch;"

270. *See* my claim 15 analysis of ground 9.

"[18] c. stearyl alcohol;"

271. *See* my claim 15 analysis of ground 9.

"[18] d. magnesium hydroxide;"

272. *See* my claim 15 analysis of ground 9.

"[18] e. shea butter;"

273. *See* my claim 15 analysis of ground 9.

"[18] f. coconut oil;"

274. *See* my claim 15 analysis of ground 9.

"[15] g. triethyl citrate; and"

275. *See* my claim 15 analysis of ground 9.

"[18] h. sunflower seed oil;"

276. *See* my claim 15 analysis of ground 9.

"[18i] said deodorant stick being free of an aluminum salt;"

277. *See* my claim 15 analysis of ground 9.

"[18j] and wherein said stick has a hardness from about 80 mm*l0 to about 140 mm*l0, as measured by penetration with ASTM D-1321 needle."

278. *See* my claim 15 analysis of ground 9.

PETITIONER DR. SQUATCH
EX. 1002

CLAIM 19

"19[Pre]. A deodorant stick comprising:"

279. *See* my claim 15 analysis of ground 9.

"[19] a. at least about 25% of a triglyceride;"

280. *See* my claim 15 analysis of ground 9.

"[19] b. a starch;"

281. *See* my claim 15 analysis of ground 9.

"[19] c. stearyl alcohol;"

282. *See* my claim 15 analysis of ground 9.

"[19] d. magnesium hydroxide;"

283. *See* my claim 15 analysis of ground 9.

"[19] e. shea butter;"

284. *See* my claim 15 analysis of ground 9.

"[19] f. coconut oil;"

285. *See* my claim 15 analysis of ground 9.

"[19] g. triethyl citrate; and"

286. *See* my claim 15 analysis of ground 9.

"[19] h. sunflower seed oil;"

287. *See* my claim 15 analysis of ground 9.

"[19i] said deodorant stick being free of an aluminum salt;"

288. *See* my claim 15 analysis of ground 9.

PETITIONER DR. SQUATCH
EX. 1002

"[19j] and wherein said stick has a hardness from about 80 mm*l0 to about 140 mm*l0, as measured by penetration with ASTM D-1321 needle."

289. *See* my claim 15 analysis of ground 9.

XVIII. SECONDARY CONSIDERATIONS

290. I am not aware of any secondary considerations that would affect my positions set forth above.

XIX. OATH

291. This declaration and my opinions herein are made to the best of my knowledge and understanding, and based on the material available to me, at the time of signing this declaration. I declare under penalty of perjury under the laws of the United States of America that all statements made of my own knowledge are true and that all statements made on information and belief are believed to be true. I understand that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001).

Date: September 27, 2024

/Bozena Michniak-Kohn/
Bozena B. Michniak-Kohn, PhD

PETITIONER DR. SQUATCH
EX. 1002