

Dr. Squatch, LLC
v.
The Procter & Gamble Company

Case No. IPR2024-01498

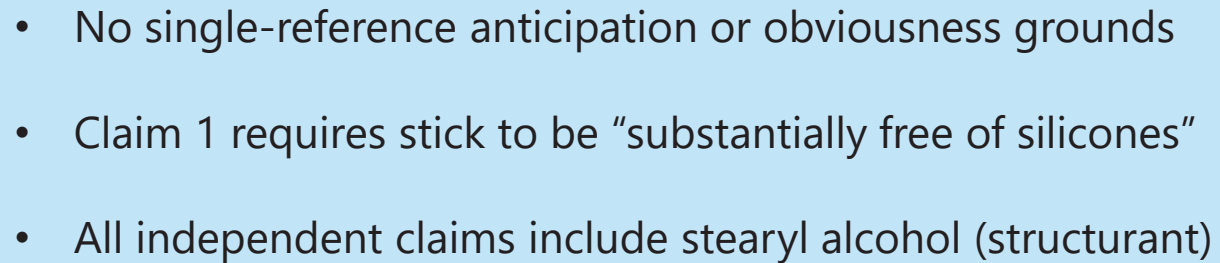
Patent No. 11,844,752

Patent Owner's Demonstratives

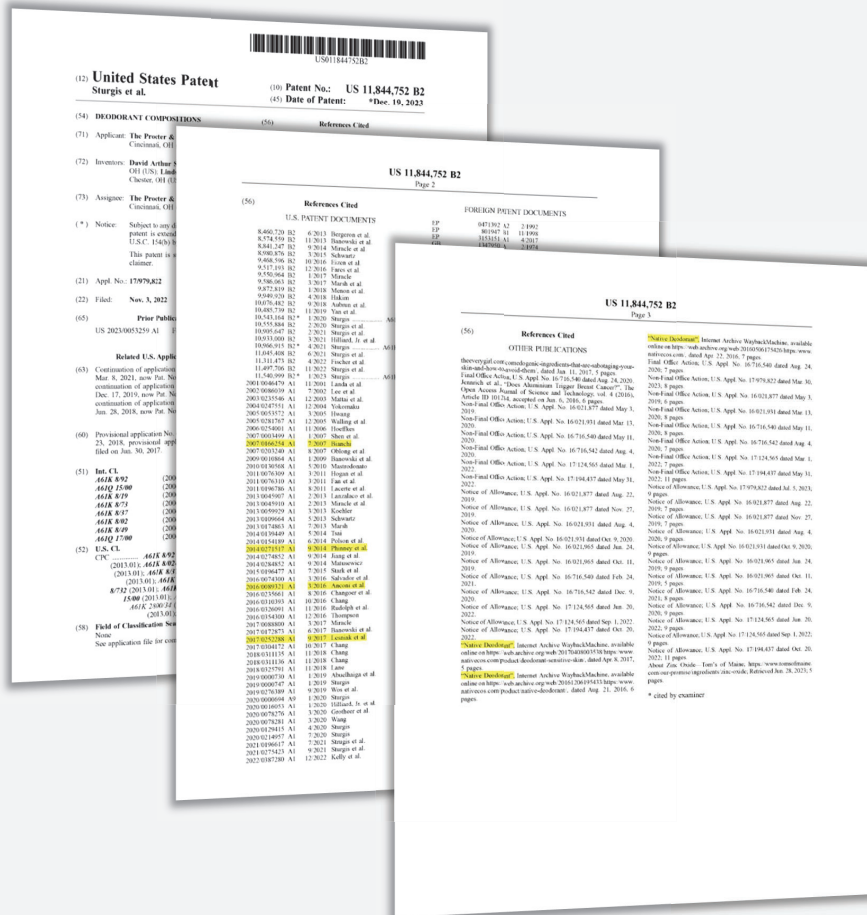
January 27, 2026



DEMONSTRATIVE EXHIBIT – NOT EVIDENCE



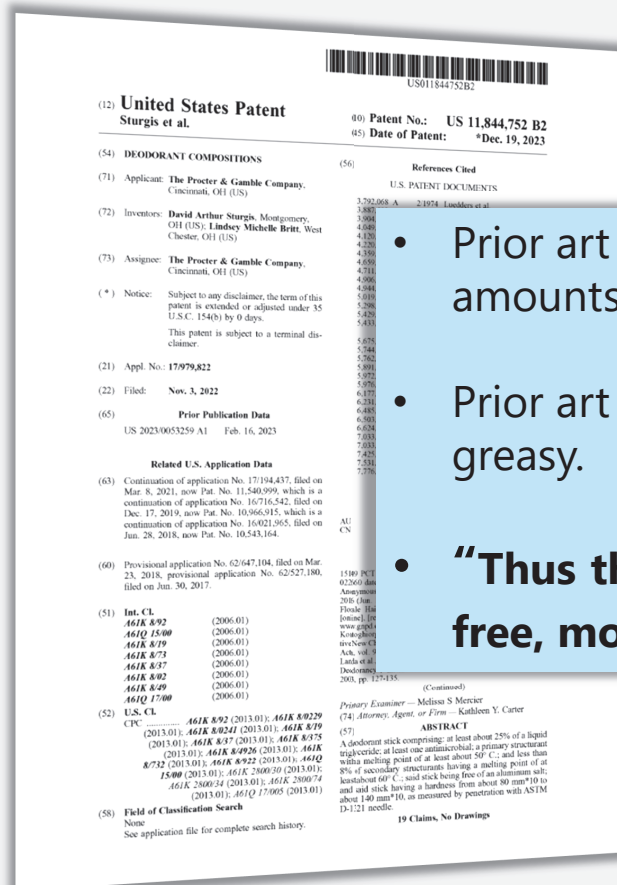
Petitioner's Art Was Before The Examiner



- GROUND 1: Lesniak, Bianchi-254
- GROUND 2: Lesniak, Bianchi-254, Phinney
- GROUND 3: Lesniak, Bianchi-254, Phinney, Anconi
- GROUND 4: Lesniak, Bianchi-254, Phinney, Anconi
- GROUND 5: Native, Bianchi-254
- GROUND 6: Native, Bianchi-254, Easy Homemade
- GROUND 7: Native, Bianchi-254, Easy Homemade, Anconi, Stoia
- GROUND 8: Native, Bianchi-254, Easy Homemade, Anconi, Stoia, Millet
- GROUND 9: Squatch, Sturgis

* *Bolded and underlined indicates art that was before Examiner*

The '752 Patent Addresses Issues With Natural Deodorants

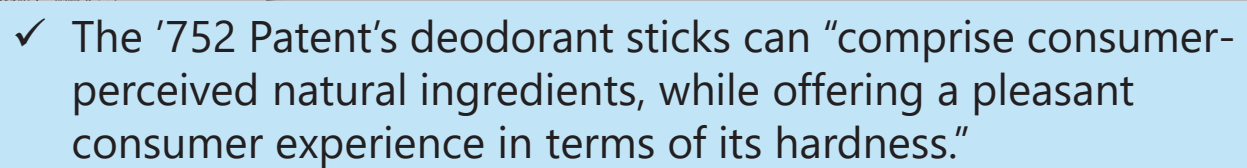


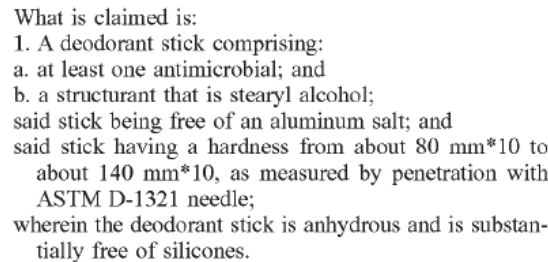
- Prior art non-natural antiperspirants (like Bianchi) contained large amounts of volatile silicones and mixed aluminum salts.
- Prior art natural deodorants were too hard, gritty, sticky, and/or greasy.
- “Thus there remains a challenge to formulate an aluminum-free, mostly silicone-free deodorant stick that is not too hard.”

'752 Patent at 1:5-6, 10-24, 2:66-67; POR at 5-7, 11

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

4





15. A deodorant stick comprising:

- a. at least about 25% by weight liquid triglyceride;
- b. a starch;
- c. stearyl alcohol;
- d. magnesium hydroxide;
- e. shea butter;
- f. coconut oil;
- g. triethyl citrate; and
- h. sunflower seed oil;

said deodorant stick being free of an aluminum salt

wherein said stick has a hardness from about 80 mm to about 140 mm*10, as measured by penetration ASTM D-1321 needle.

18. A deodorant stick comprising:
a. at least about 25% caprylic/capric triglyceride;
b. a starch;
c. stearyl alcohol;
d. magnesium hydroxide;
e. shea butter;
f. coconut oil;
g. triethyl citrate; and
h. sunflower seed oil;
said deodorant stick being free of an aluminum salt; and
wherein said stick has a hardness from about 80 mm*10
to about 140 mm*10, as measured by penetration with
ASTM D-1321 needle.

19. A deodorant stick comprising:

- a. at least about 25% of a triglyceride;
- b. a starch;
- c. stearyl alcohol;
- d. magnesium hydroxide;
- e. shea butter;
- f. coconut oil;
- g. triethyl citrate; and
- h. sunflower seed oil;

said deodorant stick being free of an aluminum salt; and wherein said stick has a hardness from about 80 mm*10 to about 140 mm*10, as measured by penetration with ASTM D-1321 needle.

Key Limitations



Limitation	Examples
No aluminum salt	"said stick being free of an aluminum salt" (cl. 1)
Substantially free of silicones	"wherein the deodorant stick... is substantially free of silicones" (cl. 1)
At least one antimicrobial	"at least one antimicrobial" (cl. 1)
Hardness range	"said stick having a hardness from about 80 mm*10 to about 140 mm*10" (all claims)
Stearyl alcohol	"a structurant that is stearyl alcohol" (cl. 1) "stearyl alcohol" (cls. 15, 18, 19)



Lesniak Grounds

Grounds 1-4

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

8

Lesniak Grounds Lack Merit



X	A POSA would have had no reason to modify Lesniak.
X	No reference or combination teaches the claimed hardness range in a silicone-free stick.
X	Lesniak does not disclose or enable aluminum-free deodorant sticks.
X	Petitioner does not explain why a POSA would have reformulated Lesniak to include Bianchi's structurant.
X	A POSA would not have added Phinney's magnesium hydroxide to Lesniak.
X	Petitioner does not explain why a POSA would have added triethyl citrate to Lesniak.
X	It was not obvious to include tapioca starch.
X	A POSA would not have added arrowroot powder to Lesniak.



Lesniak Grounds: No Reason To Modify Lesniak

✗	A POSA would have had no reason to modify Lesniak.
✗	No reference or combination teaches the claimed hardness range in a silicone-free stick.
✗	Lesniak does not disclose or enable aluminum-free deodorant sticks.
✗	Petitioner does not explain why a POSA would have reformulated Lesniak to include Bianchi's structurant.
✗	A POSA would not have added Phinney's magnesium hydroxide to Lesniak.
✗	Petitioner does not explain why a POSA would have added triethyl citrate to Lesniak.
✗	It was not obvious to include tapioca starch.
✗	A POSA would not have added arrowroot powder to Lesniak.

A POSA Would Have Had No Reason To Modify Lesniak



Petition

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEALS BOARD

DR. SQUATCH, LLC
Petitioner

v.
THE PROCTER & GAMBLE COMPANY
Patent Owner

IPR2024-01498
Patent No. 11,844,752

PETITION FOR INTER PARTES REVIEW
OF U.S. PATENT NO. 11,844,752

To the extent that Patent Owner argues that Lesniak does not explicitly articulate the negative limitation, 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, 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.* 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. *See id.*; Ex. 1002, ¶81. 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,

Petitioner's Expert: Dr. Bozena Michniak-Kohn

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

Q It's not your opinion that the formulations in Lesniak require a modification in order to be turned into a deodorant, right?

A No. They are deodorants.



Lesniak Grounds: No Silicone-Free Stick With Claimed Hardness

x	A POSA would have had no reason to modify Lesniak.
x	No reference or combination teaches the claimed hardness range in a silicone-free stick.
x	Lesniak does not disclose or enable aluminum-free deodorant sticks.
x	Petitioner does not explain why a POSA would have reformulated Lesniak to include Bianchi's structurant.
x	A POSA would not have added Phinney's magnesium hydroxide to Lesniak.
x	Petitioner does not explain why a POSA would have added triethyl citrate to Lesniak.
x	It was not obvious to include tapioca starch.
x	A POSA would not have added arrowroot powder to Lesniak.

Independent Claims Include Silicone-Free And Hardness Limitations



"[S]ubstantially free of silicones"

1. A deodorant stick comprising:
a. at least one antimicrobial; and
b. a structurant that is stearyl alcohol;
said stick being 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;
wherein the deodorant stick is anhydrous and is substantially free of silicones.

15. A deodorant stick comprising:
a. at least about 25% by weight liquid triglyceride;
b. a starch;
c. stearyl alcohol;
d. magnesium hydroxide;
e. shea butter;
f. coconut oil;
g. triethyl citrate; and
h. sunflower seed oil;
said deodorant stick being free of an aluminum salt; and
wherein said stick has a hardness from about 80 mm*10 to about 140 mm*10, as measured by penetration with ASTM D-1321 needle.

Hardness "from about 80 mm*10 to about 140 mm*10"

18. A deodorant stick comprising:
a. at least about 25% caprylic/capric triglyceride;
b. a starch;
c. stearyl alcohol;
d. magnesium hydroxide;
e. shea butter;
f. coconut oil;
g. triethyl citrate; and
h. sunflower seed oil;
said deodorant stick being free of an aluminum salt; and
wherein said stick has a hardness from about 80 mm*10 to about 140 mm*10, as measured by penetration with ASTM D-1321 needle.

19. A deodorant stick comprising:
a. at least about 25% of a triglyceride;
b. a starch;
c. stearyl alcohol;
d. magnesium hydroxide;
e. shea butter;
f. coconut oil;
g. triethyl citrate; and
h. sunflower seed oil;
said deodorant stick being free of an aluminum salt; and
wherein said stick has a hardness from about 80 mm*10 to about 140 mm*10, as measured by penetration with ASTM D-1321 needle.

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

13

No Motivation To Combine Bianchi-254's Volatile-Silicone Sticks With Lesniak

Lesniak

Bianchi-254



temperatures). It would also be desirable to formulate such compositions from all-natural ingredients (i.e. "100% natural" compositions).

What is claimed is:

1. An antiperspirant stick composition comprising:

a) from 15 to 30 wt. % antiperspirant active;

b) carrier oil comprising:

i) volatile silicone oil, the volatile silicone oil being present in the stick composition in an amount of from 20 to 40 wt. %;



Failure To Disclose The Hardness Values Is Also Fatal As To The Dependent Claims



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.

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

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

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

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

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

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

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

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

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

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

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

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, salicylic acid, niacinamide, cinnamon essential oil, cinnamon bark essential oil, cinnamic aldehyde and combinations thereof.

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

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

The '752 Patent Claims A Hardness Range Measured Using A 50g Load



E.g., Claim 1

1. A deodorant stick comprising:
 - a. at least one antimicrobial; and
 - b. a structurant that is stearyl alcohol;said stick being 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; wherein the deodorant stick is anhydrous and is substantially free of silicones.

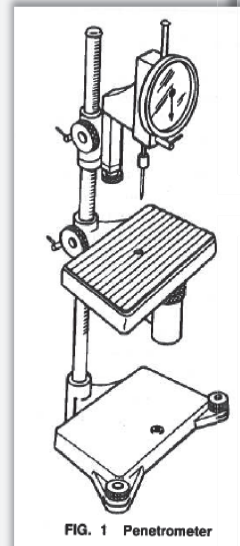


FIG. 1 Penetrometer

'752 Hardness Testing Procedure

Shaft falls without visible signs of frictional resistance. Ensure the total weight of the shaft and needle is 50 ± 0.2 grams when the shaft is in free fall. Note: for modern, automated or digital systems this may be performed automatically and confirmed through annual calibration.

the method and positioned under the rod. The apparatus is adjusted so that the point of the needle or cone is just touching the top surface of the sample. Consistent positioning of the rod is critical to the measured penetration value. The rod is then released and allowed to travel downward, driven only by the weight of the needle (or cone) and the rod. Penetration is the tenths of a millimeter travelled following release.

No Reference Teaches The Claimed Hardness Range

Total Load
of 50g

'752 Hardness Testing Procedure

Ensure the total weight of the shaft and needle is ~~50~~ 50 ± 0.2 grams when the shaft is in free fall. Note: for modern, automated or digital systems this may be performed automatically and confirmed through annual calibration.

Total Load of
100g

Bianchi-254

Hardness Method

[0117] Stick hardness is measured using a penetrometer (model HPT 7138 from Precision) equipped with a 2.5 gm brass/steel tapered needle (DIN 51-579) on sticks that have been allowed to equilibrate for approximately 8-24 hours at a temperature of 26.7° C. Measurements are taken from 6

DIN 51-579 Standard

The weight of the test needle should be 2.5 ± 0.05 g and that of the guide rod 97.5 ± 0.1 g.

perature — usually 25 °C. The depth of penetration of a loaded and temperature-controlled test needle (total weight 100 g) is then determined with a penetrometer under water at the test temperature, which is main-

No Reference Teaches The Claimed Hardness Range



Dr. Robert Lochhead



A POSA would have understood that Bianchi-254 required a 100-g weight needle in order to penetrate the same or similar distance as a 50-g weight needle would penetrate in the '752 claimed compositions."

"There are no formulas to convert the results of one of these methods to the other, but a POSA would have expected that the Bianchi-254 hardness range indicates *significantly harder* sticks than that claimed in the '752 Patent."

Even If Bianchi-254 Teaches Hardness Range (It Does Not), It Achieves That Hardness Using Prohibited Ingredients



Bianchi-254

TABLE 1

COMPONENT (wt. %)	Antiperspirant Formulations										
	FORMULATION NO.										
	1	2	3	4	5	6	7	8	9	10	11
Castor Wax (mp 80° C.)	3.5	4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4	4
Stearyl Alcohol (mp 60°)	18	18	20	18	18	18	18	18	18	18	18
Polyethylene (400 mw; mp 82-84° C.)	0.3	0.5	0								
Silica	0.3										
PPG-14 Butyl Ether	20	5	5								
C12-C15 Alkyl Benzoate (Finsolv TN)	5	20	18								
Dimethicone, 50 cst; (Dow Corning 200)	1	1	1								
Sunflower Oil	0.5	0.5	0								
Talc											
AAZG (17.8%)	24	20	20								
Fragrance	1	1	1								
BHT (butylated hydroxytoluene)	0.05	0.05	0								
Cyclomethicone (Silicone 245; Dow Corning)	26.35	29.95	30								

TABLE 5

COMPONENT (wt. %)	Antiperspirant Stick Formulations							
	FORMULATION NO.							
	12	13	14	15	16	17	18	19
Castor Wax (mp 80° C.)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Stearyl Alcohol (mp 60°)	18	18	18	18	18	18	18	18
Polyethylene (400 mw; mp 82-84° C.)	1	1	1	1	1	1	1	1
Stearth 100	0.5	0.5	0.5	0.5	—	—	0.5	—
PPG-14 Butyl Ether	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
C12-C15 Alkyl Benzoate (Finsolv TN)	15	15	15	15	15	15	15	15
Dimethicone, 50 cst (Dow Corning 200)	1	1	1	1	1	1	1	1
Sunflower Oil	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
AAZG (17.8%)	20	20	20	20	30	24	20	24
Fragrance	1.25	1.25	1.25	1.25	1	1	1.25	1
Fragrance Encapsulate							1.5	1.5
BHT (butylated hydroxytoluene)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Cyclomethicone (Silicone 245; Dow Corning)	28.7	27.7	28.2	29.7	20.45	26.45	28.2	24.95
Cyclodextrin	1	2	1.5					



Contains silicones
Contains aluminum
Hardness under 100g Test

Petitioner's Combination Fails To Teach A Deodorant Stick Substantially Free Of Silicones With The Proper Hardness



Claim 1

1. A deodorant stick comprising:
a. at least one antimicrobial; and
b. a structurant that is stearyl alcohol;
said stick being 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;
wherein the deodorant stick is anhydrous and is **substantially free of silicones**.



No silicones
No aluminum
Hardness under 50g Test

Bianchi-254

TABLE 1

COMPONENT (wt. %)	Antimicrobial	
	1	2
Castor Wax (mp 80° C.)	3.5	4
Stearyl Alcohol (mp 60°)	18	18
Polyethylene (400 mw; mp 82-84° C.)	0.3	0.5
Silica	0.3	
PPG-14 Butyl Ether C12-C15 Alkyl Benzoate (Finsolv TN)	20	5
Dimethicone, 50 cst; (Dow Corning 200)	5	20
Sunflower Oil	1	1
Talc	0.5	0.5
AAZG (17.8%)	24	20
Fragrance	1	1
BHT (butylated hydroxytoluene)	0.05	0.05
Cyclomethicone; (Silicone 245; Dow Corning)	26.35	29.95

TABLE 5

Antiperspirant Stick Formulations

COMPONENT (wt. %)	FORMULATION NO.								
	12	13	14	15	16	17	18	19	
Castor Wax (mp 80° C.)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
Stearyl Alcohol (mp 60°)	18	18	18	18	18	18	18	18	
Polyethylene (400 mw; mp 82-84° C.)	1	1	1	1	1	1	1	1	
Stearth 100	0.5	0.5	0.5	0.5	—	—	0.5	—	
PPG-14 Butyl Ether C12-C15 Alkyl Benzoate (Finsolv TN)	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	
Dimethicone, 50 cst; (Dow Corning 200)	15	15	15	15	15	15	15	15	
Sunflower Oil	1	1	1	1	1	1	1	1	
AAZG (17.8%)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Fragrance	20	20	20	20	30	24	20	24	
BHT (butylated hydroxytoluene)	1.25	1.25	1.25	1.25	1	1	1.25	1	
Cyclomethicone; (Silicone 245; Dow Corning)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	
Cyclodextrin	28.7	27.7	28.2	29.7	20.45	26.45	28.2	24.95	



Contains silicones
Contains aluminum
Hardness under 100g Test

Knowing The Hardness Goal Does Not Render Achieving It Obvious



Abbott Laby's v. Sandoz, Inc., 544 F.3d 1341, 1352 (Fed. Cir. 2008)



"[K]nowledge of the goal does not render its achievement obvious."

Dr. Robert Lochhead

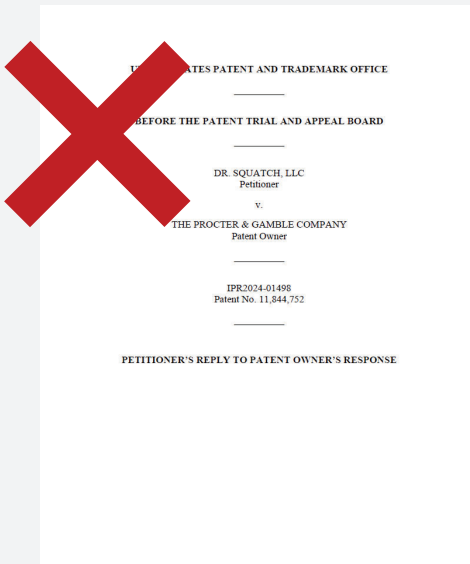


- Instability of Lesniak's compositions would have prevented POSA from arriving at claimed hardness through routine optimization

Dr. Squatch's Belated Testing Data Is Improper And Highly Suspect



1 *It belonged in the Petition and should not be considered on Reply.*



Dr. Squatch's expert even anticipated P&G's argument, yet Petitioner failed to substantively address the different testing methodologies in its *prima facie* case

¹³ While claim 1 refers to an ASTM-D 1321 needle, it does not expressly recite a particular hardness test. To the extent Patent Owner alleges that the claim requires a specific test, in my opinion, based on the references to ASTM D-1321 in the claims and specification of the '999 Patent, a POSA would understand that test to be the ASTM D-1321 test known in the art and referred to in Bianchi '518. Regardless of the test used, a POSA would have known how to adjust the hardness as needed to make a hardness level desirable to consumers and at least within the range set forth in Bianchi '518.

2 *It is unreliable, for many, independent problems and reasons...*

E.g., Paper 19 at 4 (citing IPR2024-01104, Ex. 1002 at 44 n.13)

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

22

Problem #1: The Data Suffers From Outcome-Determinative Bias

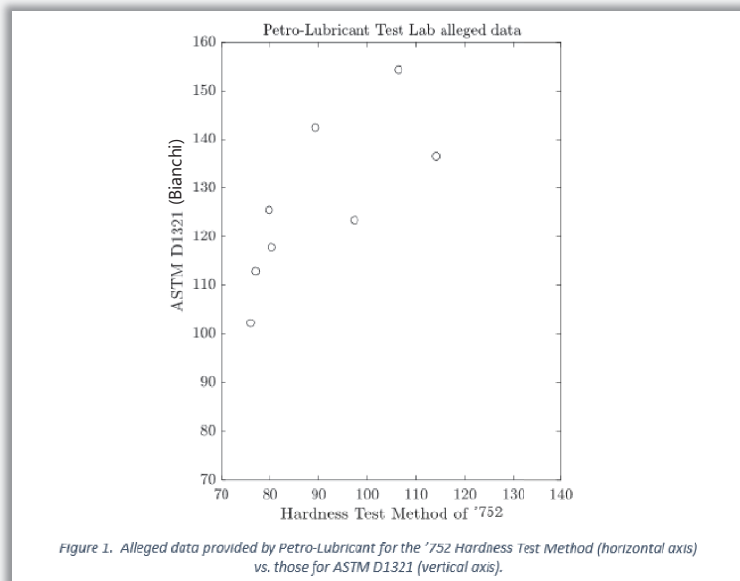


- Highly Selective Set of Deodorant Sticks
- Undisclosed Ingredients / Formulations
- Not Representative of Prior Art

Problem #2: The Data Fails To Show A Scientifically Valid Correlation



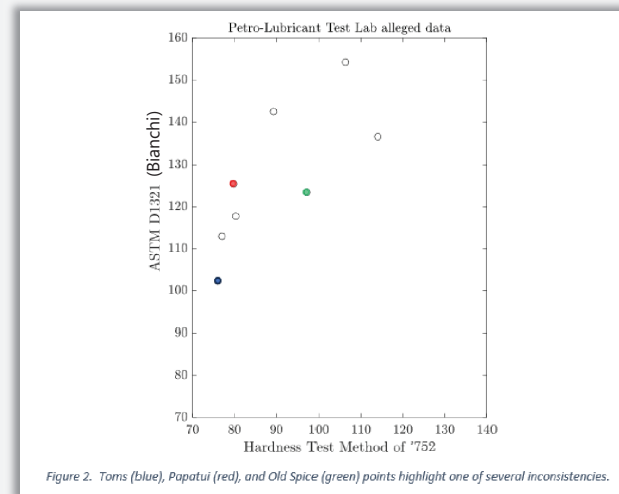
1 Just a scattering of disparate data points



2 Ordering from Hardest → Softest under each method is unpredictable and not linear

P&G Method		ASTM D1321
Toms	→	Toms
Native	→	Native
Papatui	→	Sephora
Sephora	→	Old Spice
Billie	→	Papatui
Old Spice	→	Lume
Dove	→	Billie
Lume	→	Dove

3 Sticks of similar hardness under one test have vastly different hardnesses under the other



Problem #3: The Testing Methodology Is Suspect

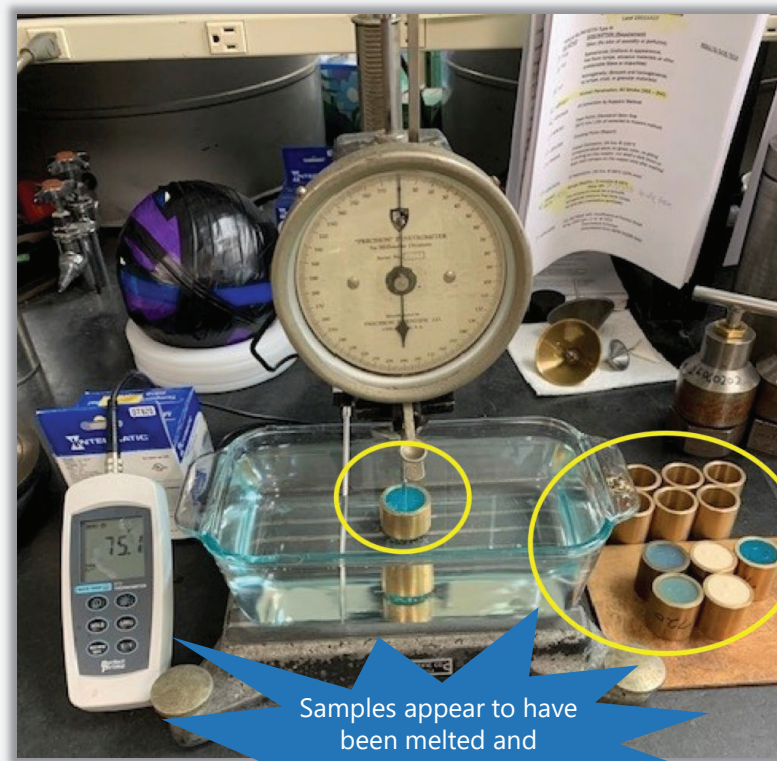


Dr. Michniak-Kohn did not perform the testing herself.

Dr. Michniak-Kohn's Instructions for P&G Method:

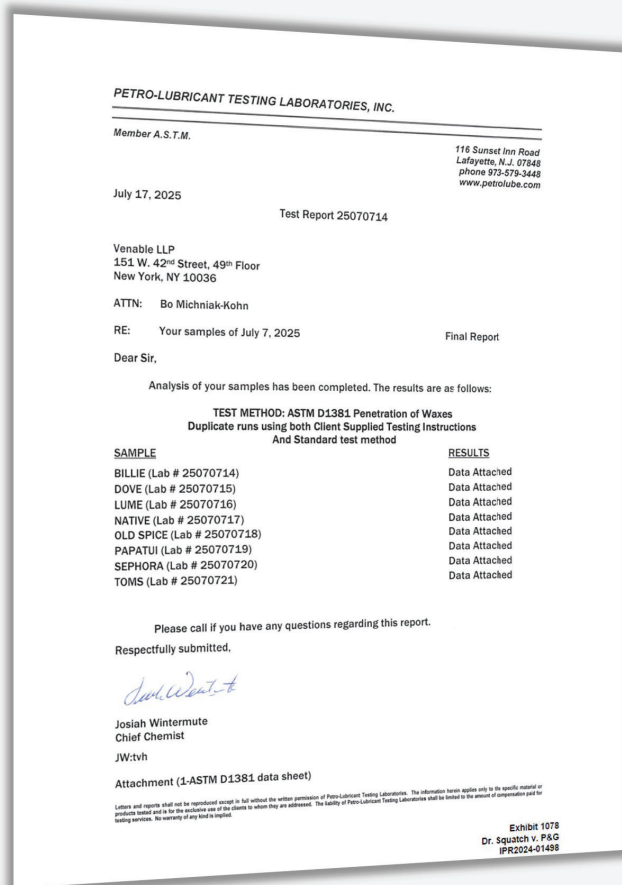
¹ The instructions for this test were taken from the specification of the '752 Patent (see Ex. 1001, 11:28-12:57) and put in a format that could be easily followed by the testing lab.

Do not remove deodorants from original containers or melt them. On a deodorant stick that has been at an ambient temperature of between 22° C. and 26° C. for at least 24 hours, slice off top ½ inch of product to achieve a flat surface with a wire cutter drawn across the upper lip of the canister.



Samples appear to have been melted and poured into metal cups

Hardness Depends On Specific Product Formulations



Petitioner's belated testing shows that hardness varies depending upon the formulation



Lesniak Grounds: No "Aluminum Free" Deodorant Stick

x	A POSA would have had no reason to modify Lesniak.
x	No reference or combination teaches the claimed hardness range in a silicone-free stick.
x	Lesniak does not disclose or enable aluminum-free deodorant sticks.
x	Petitioner does not explain why a POSA would have reformulated Lesniak to include Bianchi's structurant.
x	A POSA would not have added Phinney's magnesium hydroxide to Lesniak.
x	Petitioner does not explain why a POSA would have added triethyl citrate to Lesniak.
x	It was not obvious to include tapioca starch.
x	A POSA would not have added arrowroot powder to Lesniak.

The Claims Require A “Deodorant Stick” That Is Aluminum-Free

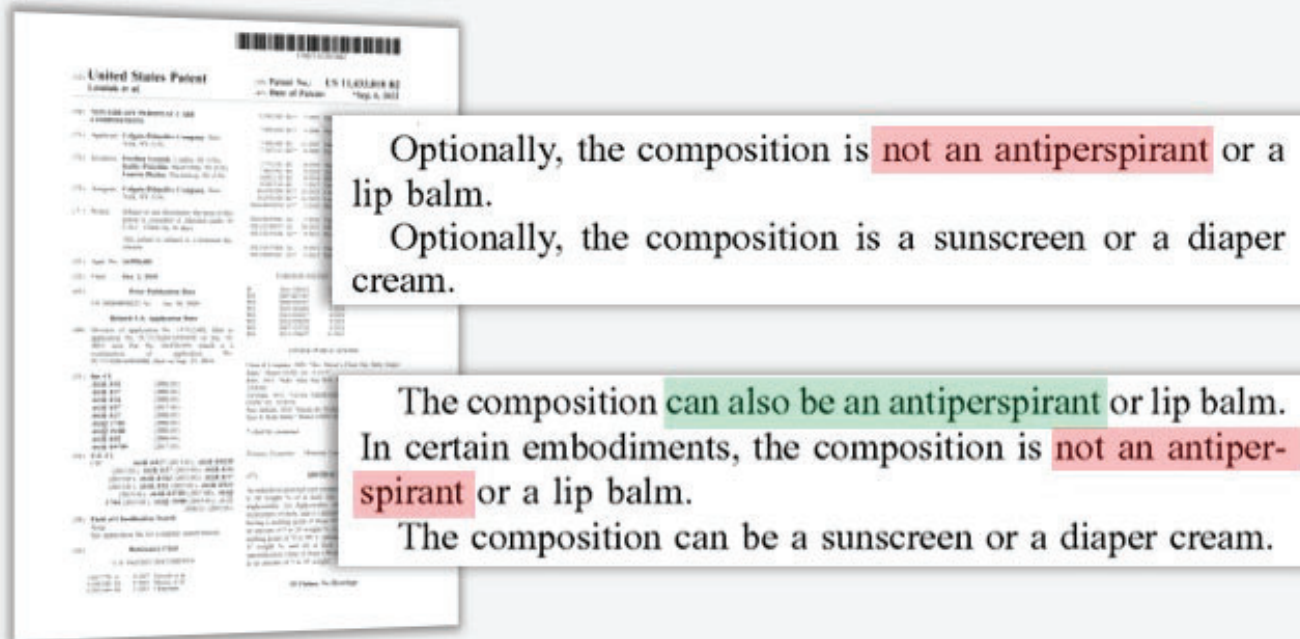


1. A deodorant stick comprising:
 - a. at least one antimicrobial; and
 - b. a structurant that is stearyl alcohol;said stick being free of an aluminum salt; and
said stick having a hardness from about 80 mm*10 to about 140 mm*10, as measured by penetration with ASTM D-1321 needle;
wherein the deodorant stick is anhydrous and is substantially free of silicones.

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

28

Lesniak merely posits an "antiperspirant" in a single passing phrase . . .



Lesniak Does Not Disclose An Aluminum-Free “Deodorant Stick”



...and a POSA would have understood an “antiperspirant” contains aluminum.

1 FDA Approved Antiperspirant Actives

- (a) Aluminum chloride up to 15 percent, calculated on the hexahydrate form, in an aqueous solution nonaerosol dosage form.
- (b) Aluminum chlorohydrate up to 25 percent.
- (c) Aluminum chlorohydrate polyethylene glycol up to 25 percent.
- (d) Aluminum chlorohydrate propylene glycol up to 25 percent.
- (e) Aluminum dichlorohydrate up to 25 percent.
- (f) Aluminum dichlorohydrate polyethylene glycol up to 25 percent.
- (g) Aluminum dichlorohydrate propylene glycol up to 25 percent.
- (h) Aluminum sesquichlorohydrate up to 25 percent.
- (i) Aluminum sesquichlorohydrate polyethylene glycol up to 25 percent.
- (j) Aluminum sesquichlorohydrate propylene glycol up to 25 percent.
- (k) Aluminum zirconium octachlorohydrate up to 20 percent.
- (l) Aluminum zirconium octachlorohydrate gly up to 20 percent.
- (m) Aluminum zirconium pentachlorohydrate up to 20 percent.
- (n) Aluminum zirconium pentachlorohydrate gly up to 20 percent.
- (o) Aluminum zirconium tetrachlorohydrate up to 20 percent.
- (p) Aluminum zirconium tetrachlorohydrate gly up to 20 percent.
- (q) Aluminum zirconium trichlorohydrate up to 20 percent.
- (r) Aluminum zirconium trichlorohydrate gly up to 20 percent.

2 Dr. Robert Lochhead



“To a POSA, the term ‘antiperspirant’ would have referenced a composition containing aluminum salts or complexes—the only antiperspirant actives approved by the FDA at the relevant time.”

3 Dr. Squatch Website



Furthermore, the most important difference between antiperspirant is actually one specific ingredient, aluminum. If that stink stick contains aluminum, the product is an antiperspirant. Aluminum is the sweat blocking active ingredient in antiperspirant products, which aims to control or prevent sweat entirely. Metallic salts and aluminum chloride are the active ingredients in antiperspirants. The aluminum in your antiperspirant is activated when you start to sweat. It then gets absorbed into your sweat glands, and forms a plug that blocks sweat from leaving your body. So even though your body is producing sweat it isn't able to reach the surface of the skin.

Lesniak Does Not Enable A “Deodorant Stick”

Dr. Robert Lochhead



- Slight differences in a composition can cause instability
- Lesniak’s **only stick formula** is a sunscreen, and Lesniak is silent on its stability

Lesniak

	Composition#										
	1*	2*	3*	4*	5*	6*	7*	8	9*	10*	11
	Weight %										
Zinc Oxide	20	20	20	20	20	20	20	20	20	20	20
Sunflower oil	57	30	10	10	10	10	10	10	10	10	12.5
Caprylic/Capric Triglyceride	5	35	55	53	53	54	54	53	53	50	52
Beeswax	13	15	15	17	17	15	15	15	15	15	13.5
Shea butter	5	0	0	0	0	0	0	0	0	0	0
CastorWax MP80 hydrogenated castor oil	0	0	0	0	0	0	0	2	0	0	2
Tapioca starch	0	0	0	0	0	0	1	0	0	0	0
Cetyl Alcohol	0	0	0	0	0	0	0	0	2	0	0
Thickener silica	0	0	0	0	0	1	0	0	0	0	0
Natural jelly SP511	0	0	0	0	0	0	0	0	0	5	0
Total	100	100	100	100	100	100	100	100	100	100	100
Freeze/thaw stability	F/T 3 Pass	F/T 3 Pass	F/T 3 Pass	F/T 3 Pass	F/T 3 Pass	F/T 3 Pass	F/T 3 Pass	F/T 3 Pass	F/T 3 Pass	F/T 3 Pass	F/T 3 Pass
High temp. stability (49° C.)	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Pass	Fail	Fail	Pass
“acceptability”	No	No	Yes	Yes	Yes	No	No	Yes	No	No	Yes
Dispensing acceptability	No	No	No	No	No	No	No	Yes	No	No	Yes
Greasiness/after-feel acceptability	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

*denotes comparative composition.

9 out of 11 Lesniak Example Compositions failed stability testing



Lesniak Grounds: No Reformulation of Structurant

x	A POSA would have had no reason to modify Lesniak.
x	No reference or combination teaches the claimed hardness range in a silicone-free stick.
x	Lesniak does not disclose or enable aluminum-free deodorant sticks.
x	Petitioner does not explain why a POSA would have reformulated Lesniak to include Bianchi's structurant.
x	A POSA would not have added Phinney's magnesium hydroxide to Lesniak.
x	Petitioner does not explain why a POSA would have added triethyl citrate to Lesniak.
x	It was not obvious to include tapioca starch.
x	A POSA would not have added arrowroot powder to Lesniak.

No Motivation To Combine Bianchi-254's Volatile Silicone Sticks With Lesniak Given Inconsistent Disclosures



Lesniak

Bianchi-254



temperatures). It would also be desirable to formulate such compositions from all-natural ingredients (i.e. "100% natural" compositions).

[0042] In the practice of this invention, the volatile silicone oil is present in the stick composition in an amount of from 20 to 40 wt. %, preferably 25 to 35 wt. %. In at least



A POSA Would Not Have Reformulated Lesniak To Include Bianchi-254's Primary Structurant



Independent Claims

1. A deodorant stick comprising:
a. at least one antimicrobial; and
b. **a structurant that is stearyl alcohol**;
said stick being 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;
wherein the deodorant stick is anhydrous and is substantially free of silicones.

15. A deodorant stick comprising:
a. at least about 25% by weight liquid triglyceride;
b. a starch;
c. **stearyl alcohol**;
d. magnesium hydroxide;
e. shea butter;
f. coconut oil;
g. triethyl citrate; and
h. sunflower seed oil;
said deodorant stick being free of an aluminum salt; and
wherein said stick has a hardness from about 80 mm*10 to about 140 mm*10, as measured by penetration with ASTM D-1321 needle.

18. A deodorant stick comprising:
a. at least about 25% caprylic/capric triglyceride;
b. a starch;
c. **stearyl alcohol**;
d. magnesium hydroxide;
e. shea butter;
f. coconut oil;
g. triethyl citrate; and
h. sunflower seed oil;
said deodorant stick being free of an aluminum salt; and
wherein said stick has a hardness from about 80 mm*10 to about 140 mm*10, as measured by penetration with ASTM D-1321 needle.

19. A deodorant stick comprising:
a. at least about 25% of a triglyceride;
b. a starch;
c. **stearyl alcohol**;
d. magnesium hydroxide;
e. shea butter;
f. coconut oil;
g. triethyl citrate; and
h. sunflower seed oil;
said deodorant stick being free of an aluminum salt; and
wherein said stick has a hardness from about 80 mm*10 to about 140 mm*10, as measured by penetration with ASTM D-1321 needle.

Petitioner's picking-and-choosing of ingredients evinces hindsight.

Dr. Robert Lochhead

- Lesniak describes fragile compositions that can become unstable with even slight ingredient changes
- A POSA would not have reasonably expected success in completely reformulating Lesniak to make stearyl alcohol the structurant "present in the greatest amount" of the stick





Lesniak Grounds: No Addition of $\text{Mg}(\text{OH})_2$

X	A POSA would have had no reason to modify Lesniak.
X	No reference or combination teaches the claimed hardness range in a silicone-free stick.
X	Lesniak does not disclose or enable aluminum-free deodorant sticks.
X	Petitioner does not explain why a POSA would have reformulated Lesniak to include Bianchi's structurant.
X	A POSA would not have added Phinney's magnesium hydroxide to Lesniak.
X	Petitioner does not explain why a POSA would have added triethyl citrate to Lesniak.
X	It was not obvious to include tapioca starch.
X	A POSA would not have added arrowroot powder to Lesniak.

Magnesium Hydroxide Claims



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, salicylic acid, niacinamide, cinnamon essential oil, cinnamon bark essential oil, cinnamic aldehyde and combinations thereof.

15. A deodorant stick comprising:
a. at least about 25% by weight liquid triglyceride;
b. a starch;
c. stearyl alcohol;
d. magnesium hydroxide;
e. shea butter;
f. coconut oil;
g. triethyl citrate; and
h. sunflower seed oil;
said deodorant stick being free of an aluminum salt; and
wherein said stick has a hardness from about 80 mm*10 to about 140 mm*10, as measured by penetration with ASTM D-1321 needle.

18. A deodorant stick comprising:
a. at least about 25% caprylic/capric triglyceride;
b. a starch;
c. stearyl alcohol;
d. magnesium hydroxide;
e. shea butter;
f. coconut oil;
g. triethyl citrate; and
h. sunflower seed oil;
said deodorant stick being free of an aluminum salt; and
wherein said stick has a hardness from about 80 mm*10 to about 140 mm*10, as measured by penetration with ASTM D-1321 needle.

19. A deodorant stick comprising:
a. at least about 25% of a triglyceride;
b. a starch;
c. stearyl alcohol;
d. magnesium hydroxide;
e. shea butter;
f. coconut oil;
g. triethyl citrate; and
h. sunflower seed oil;
said deodorant stick being free of an aluminum salt; and
wherein said stick has a hardness from about 80 mm*10 to about 140 mm*10, as measured by penetration with ASTM D-1321 needle.

Problem #1: Lesniak & Phinney Describe Entirely Different Uses For Metal Oxides



Petitioner argues...

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.

Lesniak

13. The composition of claim 12, wherein the composition comprises a sun-protective level of zinc oxide particles.

VS.

Phinney

Deodorant formulations are provided. The formulations all commonly include magnesium oxide, zinc oxide and as a disinfecting agent, potassium chloride and/or potassium sulphate. The combination provides long lasting odor protection since the disinfectant destroys odor causing microorganisms.

Problem #2: Phinney's Magnesium Hydroxide Is Part Of A Multi-Ingredient Combination



Phinney

Deodorant formulations are provided. The formulations all commonly include magnesium oxide, zinc oxide and as a disinfecting agent, potassium chloride and/or potassium sulphate. The combination provides long lasting odor protection since the disinfectant destroys odor causing microorganisms.

It has now surprisingly been found that incorporation of a disinfectant with the platform of magnesium oxide and zinc oxide base has particular efficacy in destroying the microorganisms causing the odour. It is believed that the previously

Dr. Bozena Michniak-Kohn



Q: And so none of these compositions that are disclosed in Phinney contain magnesium hydroxide alone without the other two elements that we've discussed, right?

A: No, because I guess his invention was the -- the actual combination that he was looking at.

Problem #3: Phinney Combines Magnesium Hydroxide With Zinc Hydroxide, Not Zinc Oxide



Phinney

US 9,141,282

(12) United States Patent
Phinney et al.

(10) Patent No.: US 9,141,282
(45) Date of Patent: Apr. 1, 2014

(54) DEODORANT FORMULATION

(71) Applicants: Robin Phinney, Okotaka (CA);
Jonathan Phinney, Martinsville (CA)

(72) Inventors: Robin Phinney, Okotaka (CA);
Jonathan Phinney, Martinsville (CA)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 277 days.

(21) Appl. No.: 13/803,387

(22) Filed: Mar. 14, 2013

(65) Prior Publication Data
US 2014/0271517 A1 Sep. 18, 2014

(51) Int. Cl.
A61K 8/27 (2006.01)
A61Q 15/00 (2006.01)
A61K 8/19 (2006.01)
A61K 8/34 (2006.01)
A61K 8/50 (2006.01)
A61K 8/29 (2006.01)

(52) U.S. Cl.
CPC — A61K 8/27 (2013.01); A61K 8/19 (2013.01);
A61K 8/29 (2013.01); A61K 8/34 (2013.01);
A61K 8/50 (2013.01); A61K 8/56 (2013.01);
A61Q 15/00 (2013.01)

(56) Field of Classification Search
CPC — A61K 8/27; A61K 8/29; A61K 8/34; A61K 8/50; A61Q 15/00
See application file for complete search history.

(56) References Cited
U.S. PATENT DOCUMENTS
3,943,242 A * 11/1979 Torg et al.
2007/0252982 A1 * 8/2007 Wolfson et al.
2011/0229427 A1 * 9/2011 Khaj et al.
* cited by examiner

Primary Examiner — Ali Senechal
Assistant Examiner — Genevieve S. Alley
(74) Attorney, Agent, or Firm — Craig J. Lovick, Larkin
Hoffman Daly & Lindgren, Ltd.

(57) ABSTRACT
Deodorant formulations are provided. The formulations all commonly include magnesium oxide, zinc oxide and/or a disinfecting agent, potassium chloride and/or potassium sulfate. The combination provides long lasting odor control since the disinfectant destroys odor causing microbes. The formulations all contain natural ingredients. The absence of petroleum based or related synthetic substances contributes to the efficacy of the formulations.

7 Claims, No Drawings

The magnesium hydroxide incorporated in a formulation of the invention for controlling perspiration odour such that the formulation has a pH of about 9 to about 10.5. Preferably, the pH of the formulation is about 10. The formulations discussed herein include zinc hydroxide. This combination provides for a pH of about 7.5 to about 10.5, preferably about 9 to about 10. The zinc hydroxide typically lowers the pH of the magnesium hydroxide-perspiration odour-controlling formulation of the invention.

In respect of greater detail regarding the formulation, magnesium oxide and zinc oxide must have high reactivity and are added to water along with potassium sulfate and mixed until the magnesium oxide and zinc oxide are converted to their hydroxides. This generally occurs within an hour. The polyols

The magnesium oxide and zinc oxide must be completely converted to their hydroxides or skin irritation will occur. The magnesium oxide and zinc oxide ratio has been found effective at 3:1 molar.

Problem #3: Phinney Combines Magnesium Hydroxide With Zinc Hydroxide, Not Zinc Oxide



Dr. Robert Lochhead



- A POSA would have needed to add significant water to Lesniak to convert zinc oxide to zinc hydroxide, which would fundamentally alter Lesniak's composition
- Lesniak may not form a stick at all under such conditions

Phinney

In respect of greater detail regarding the formulation, magnesium oxide and zinc oxide must have high reactivity and are added to water along with potassium sulfate and mixed until the magnesium oxide and zinc oxide are converted to their hydroxides. This generally occurs within an hour. The polyols ...

The magnesium oxide and zinc oxide must be completely converted to their hydroxides or skin irritation will occur.

amount between 4% and 8% by weight of said formulation; water in an amount between 18% and 22% by weight; and a balance of a cosmetically acceptable filler.

VS.

Lesniak

(57)

ABSTRACT

An anhydrous personal care composition, comprising: (a) 45 to 60 weight % of at least one ester, selected from (i) triglycerides, (ii) diglycerides, (iii) monoglycerides, (iv) monoesters of diols, and (v) diesters of diols; (b) a first wax having a melting point of from 35° C. to 72° C. present in an amount of 5 to 25 weight %; (c) a second wax having a melting point of 73 to 90° C. present in an amount of 0.5 to 15 weight %; and (d) at least one plant oil having a saponification value of from 150 to 275 mg KOH/g present in an amount of 5 to 35 weight.

Problem #4: Lesniak Uses Far More Zinc Oxide Than Phinney's Zinc Hydroxide



Lesniak

(e) zinc oxide, which is present in a concentration of 11 to 15 weight % for the diaper cream or 15 to 22 weight % for the sunscreen, based on the total weight of the composition.

Phinney

zinc hydroxide in an amount from 0.5% to 1.5% by weight of said formulation;
magnesium hydroxide in an amount from 1.0% to 2.5% by weight of said formulation;

Dr. Bozena Michniak-Kohn



Q: And Phinney teaches you that you should have **more** magnesium hydroxide than zinc hydroxide, right?

A: Yes, I believe there was more effect if you did a mix, yes. . . .

Q: And I think in column 8, line 42 they say it should be a ratio of 3 to 1, right?

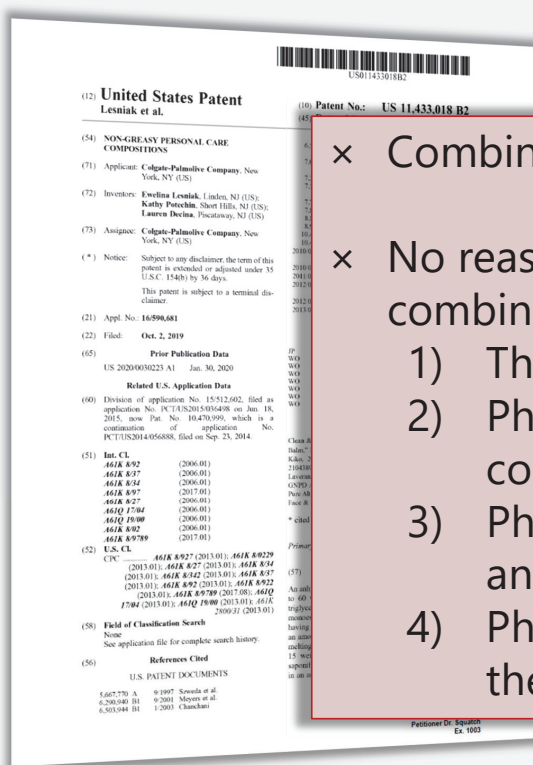
A: Yes, correct.

In Summary... A POSA Would Not Have Combined Lesniak And Phinney

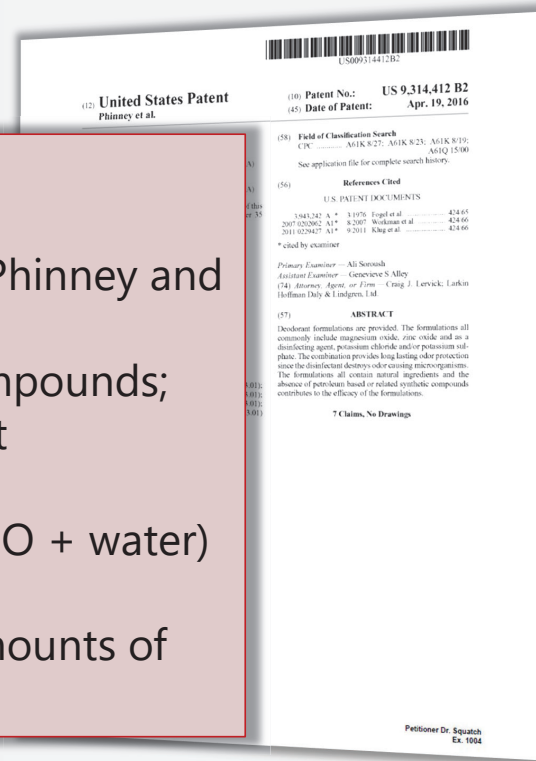


Lesniak

Phinney



- × Combination based entirely on hindsight.
- × No reason to pluck **magnesium hydroxide** out of Phinney and combine with Lesniak's **zinc oxide** where:
 - 1) The references teach different uses for the compounds;
 - 2) Phinney teaches $Mg(OH)_2$ in a multi-ingredient combination;
 - 3) Phinney's combination uses zinc hydroxide (ZnO + water) and Lesniak is anhydrous;
 - 4) Phinney and Lesniak call for vastly different amounts of their metal oxides/hydroxides.





Lesniak Grounds: No Addition of Triethyl Citrate

X	A POSA would have had no reason to modify Lesniak.
X	No reference or combination teaches the claimed hardness range in a silicone-free stick.
X	Lesniak does not disclose or enable aluminum-free deodorant sticks.
X	Petitioner does not explain why a POSA would have reformulated Lesniak to include Bianchi's structurant.
X	A POSA would not have added Phinney's magnesium hydroxide to Lesniak.
X	Petitioner does not explain why a POSA would have added triethyl citrate to Lesniak.
X	It was not obvious to include tapioca starch.
X	A POSA would not have added arrowroot powder to Lesniak.

A POSA Would Not Have Been Motivated To Combine Lesniak With Anconi's Triethyl Citrate



1 Different stick technologies

Lesniak

An anhydrous personal care composition, comprising: (a) 45 to 60 weight % of at least one ester, selected from (i) triglycerides, (ii) diglycerides, (iii) monoglycerides, (iv) monoesters of diols, and (v) diesters of diols; (b) a first wax having a melting point of from 35° C. to 72° C. present in an amount of 5 to 25 weight %; (c) a second wax having a melting point of 73 to 90° C. present in an amount of 0.5 to 15 weight %; and (d) at least one plant oil having a saponification value of from 150 to 275 mg KOH/g present in an amount of 5 to 35 weight.

Anconi

Accordingly, the composition may comprise for example mixtures of waxes and oils and solutions based on aqueous, propylene glycol and/or alcohol mixtures solidified for example by sodium stearate. Preferably, the solidifying agent is selected from the group consisting of a wax and sodium stearate.

2 Complex balancing act

Lesniak

	Composition#										
	1*	2*	3*	4*	5*	6*	7*	8	9*	10*	11
	Weight %										
Zinc Oxide	20	20	20	20	20	20	20	20	20	20	20
Sunflower oil	57	30	10	10	10	10	10	10	10	10	12.5
Caprylic/Capric Triglyceride	5	35	55	53	53	54	54	53	53	50	52
Beeswax	13	15	15	17	17	15	15	15	15	15	13.5
Shea butter	5	0	0	0	0	0	0	0	0	0	0
CastorWax MP80 hydrogenated castor oil	0	0	0	0	0	0	0	2	0	0	2
Tapioca starch	0	0	0	0	0	0	1	0	0	0	0
Cetyl Alcohol	0	0	0	0	0	0	0	0	2	0	0
Thickener silica	0	0	0	0	0	1	0	0	0	0	0
Natural jelly SP511	0	0	0	0	0	0	0	0	0	0	5
Total	100	100	100	100	100	100	100	100	100	100	100
Freeze/thaw stability	F/T	F/T	F/T	F/T	F/T	F/T	F/T	F/T	F/T	F/T	F/T
	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
High temp. stability (49° C.)	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Pass	Fail	Fail	Pass

Anconi

[0052] Sticks and solids are really complex chemical systems requiring a balance of ingredients designed to make the most of several performance factors including payout, slip or lubricity, chemical stability, softening temperature, and of course, efficacy.



Lesniak Grounds: No Addition of Tapioca Starch

x	A POSA would have had no reason to modify Lesniak.
x	No reference or combination teaches the claimed hardness range in a silicone-free stick.
x	Lesniak does not disclose or enable aluminum-free deodorant sticks.
x	Petitioner does not explain why a POSA would have reformulated Lesniak to include Bianchi's structurant.
x	A POSA would not have added Phinney's magnesium hydroxide to Lesniak.
x	Petitioner does not explain why a POSA would have added triethyl citrate to Lesniak.
x	It was not obvious to include tapioca starch.
x	A POSA would not have added arrowroot powder to Lesniak.

Lesniak Does Not Disclose A Stable Starch-Containing Stick



E.g., Claim 15

15. A deodorant stick comprising:
a. at least about 25% by weight liquid triglyceride;
b. **a starch**;
c. stearyl alcohol;
d. magnesium hydroxide;
e. shea butter;
f. coconut oil;
g. triethyl citrate; and
h. sunflower seed oil;
said deodorant stick being free of an aluminum salt; and
wherein said stick has a hardness from about 80 mm*10
to about 140 mm*10, as measured by penetration with
ASTM D-1321 needle.

Claim 16

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



- Lesniak's only starch composition (tapioca) failed across the board on **stability**, "whitening" acceptability, and dispensing acceptability

Lesniak

TABLE 2											
Sunscreens.											
	Composition#										
	1*	2*	3*	4*	5*	6*	7*	8	9*	10*	11
	Weight %										
Zinc Oxide	20	20	20	20	20	20	20	20	20	20	20
Sunflower oil	57	30	10	10	10	10	10	10	10	10	12.5
Caprylic/Capric Triglyceride	5	35	55	53	53	54	54	53	53	50	52
Beeswax	13	15	15	17	17	15	15	15	15	15	13.5
Shea butter	5	0	0	0	0	0	0	0	0	0	0
CastorWax MP80 hydrogenated castor oil	0	0	0	0	0	0	0	2	0	0	2
Tapioca starch	0	0	0	0	0	0	1	0	0	0	0
Cetyl Alcohol	0	0	0	0	0	0	0	0	2	0	0
Thickener silica	0	0	0	0	0	1	0	0	0	0	0
Natural jelly SP511	0	0	0	0	0	0	0	0	0	5	0
Total	100	100	100	100	100	100	100	100	100	100	100
Freeze/thaw stability	F/T 3 Pass	F/T 3 Pass	F/T 3 Pass	F/T 3 Pass	F/T 3 Pass	F/T 3 Pass	F/T 3 Pass	F/T 3 Pass	F/T 3 Pass	F/T 3 Pass	F/T 3 Pass
High temp. stability (49° C.)	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Pass	Fail	Fail	Pass
"Whitening" acceptability	No	No	Yes	Yes	Yes	No	No	Yes	No	No	Yes
Dispensing acceptability	No	No	No	No	No	No	No	Yes	No	No	Yes
Greasiness/after-feel acceptability	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

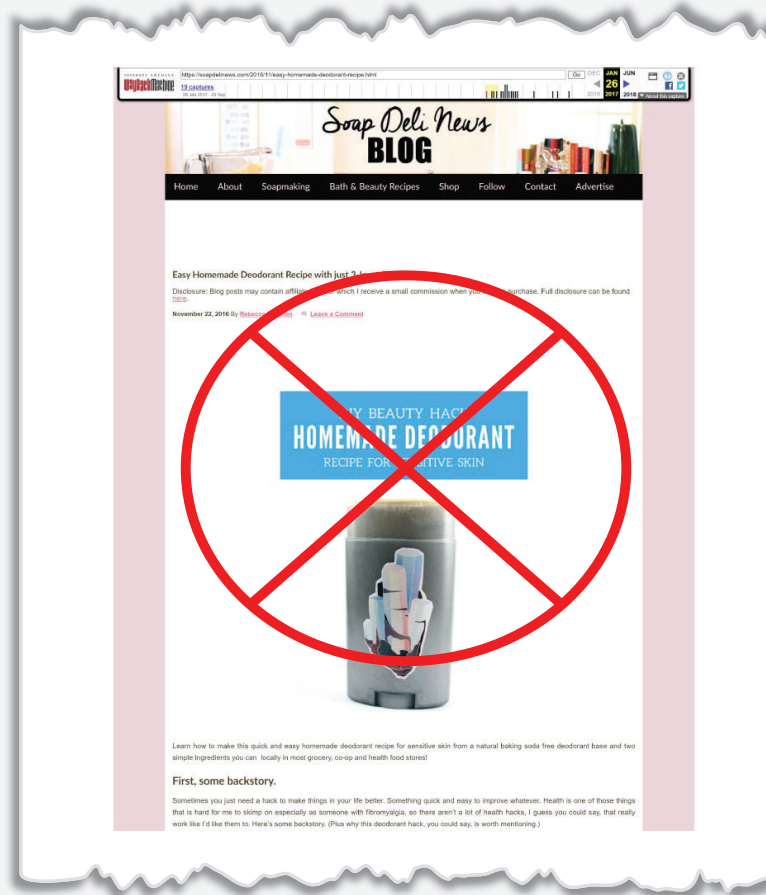
*denotes comparative composition.



Lesniak Grounds: No Addition of Arrowroot

x	A POSA would have had no reason to modify Lesniak.
x	No reference or combination teaches the claimed hardness range in a silicone-free stick.
x	Lesniak does not disclose or enable aluminum-free deodorant sticks.
x	Petitioner does not explain why a POSA would have reformulated Lesniak to include Bianchi's structurant.
x	A POSA would not have added Phinney's magnesium hydroxide to Lesniak.
x	Petitioner does not explain why a POSA would have added triethyl citrate to Lesniak.
x	It was not obvious to include tapioca starch.
x	A POSA would not have added arrowroot powder to Lesniak.

Petitioner Has Not Shown Easy Homemade Was Publicly Accessible



A POSA Would Have Had No Reason To Modify Lesniak



Petition

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEALS BOARD

DR. SQUATCH, LLC
Petitioner

v.
THE PROCTER & GAMBLE COMPANY
Patent Owner

IPR2024-01498
Patent No. 11,844,752

PETITION FOR INTER PARTES REVIEW
OF U.S. PATENT NO. 11,844,752

To the extent that Patent Owner argues that Lesniak does not explicitly articulate the negative limitation, 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,

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.*

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. *See id.*; Ex. 1002, ¶81.

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,

Petitioner's Expert: Dr. Bozena Michniak-Kohn

Q It's not your opinion that the formulations in Lesniak require a modification in order to be turned into a deodorant, right?

A No. They are deodorants.



Petitioner does not identify any problem with Lesniak that would motivate a POSA to add arrowroot for "thickening and absorbing properties"

Issues with Lesniak – Summary



Petitioner's Lesniak Grounds fail across the board for each of the reasons just shown:

X	A POSA would have had no reason to modify Lesniak.
X	No reference or combination teaches the claimed hardness range in a silicone-free stick.
X	Lesniak does not disclose or enable aluminum-free deodorant sticks.
X	Petitioner does not explain why a POSA would have reformulated Lesniak to include Bianchi's structurant.
X	A POSA would not have added Phinney's magnesium hydroxide to Lesniak.
X	Petitioner does not explain why a POSA would have added triethyl citrate to Lesniak.
X	It was not obvious to include tapioca starch.
X	A POSA would not have added arrowroot powder to Lesniak.



Native Grounds

Grounds 5-8

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

51

Native Grounds Lack Merit



X	A POSA would have had no reason to modify Native.
X	A POSA would not have been motivated to combine Native and Bianchi-254.
X	Petitioner's silicone-free / hardness argument is again wholly deficient.
X	A POSA would not have implemented Bianchi-254's weight percentages nor had any expectation of success in doing so.
X	A POSA would not have added Phinney's magnesium hydroxide to Native.
X	Petitioner does not explain why a POSA would have added triethyl citrate or sunflower seed oil to Native.
X	It was not obvious to include tapioca starch.



Native Grounds: No Reason to Modify Native

X	A POSA would have had no reason to modify Native.
X	A POSA would not have been motivated to combine Native and Bianchi-254.
X	Petitioner's silicone-free / hardness argument is again wholly deficient.
X	A POSA would not have implemented Bianchi-254's weight percentages nor had any expectation of success in doing so.
X	A POSA would not have added Phinney's magnesium hydroxide to Native.
X	Petitioner does not explain why a POSA would have added triethyl citrate or sunflower seed oil to Native.
X	It was not obvious to include tapioca starch.

Problems With Native As A Prior Art Printed Publication



- Product v. Patent / Printed Publication
- No specific formulation information
- Mere list of ingredients with changeable amounts as formulation changes are made

A POSA Would Have Had No Reason To Modify Native



Native



★★★★★

"Finally! A natural deodorant that works like it's supposed to! I put it on in the morning and never think about it again. `It lasts all day and it feels so clean."



★★★★★

"I never thought about natural deodorant until I got pregnant. I didn't want to put all the toxins that ordinary deodorants have on my body, so I looked around and found Native. `It's wonderful! I love it so much."



★★★★★

"I really didn't like the sticky feel of my Degree deodorant, but I didn't know what to do. `I finally found Native about a month ago. `It took about a week for my body to detox from Degree. After that, it was smooth sailing! I love it!"



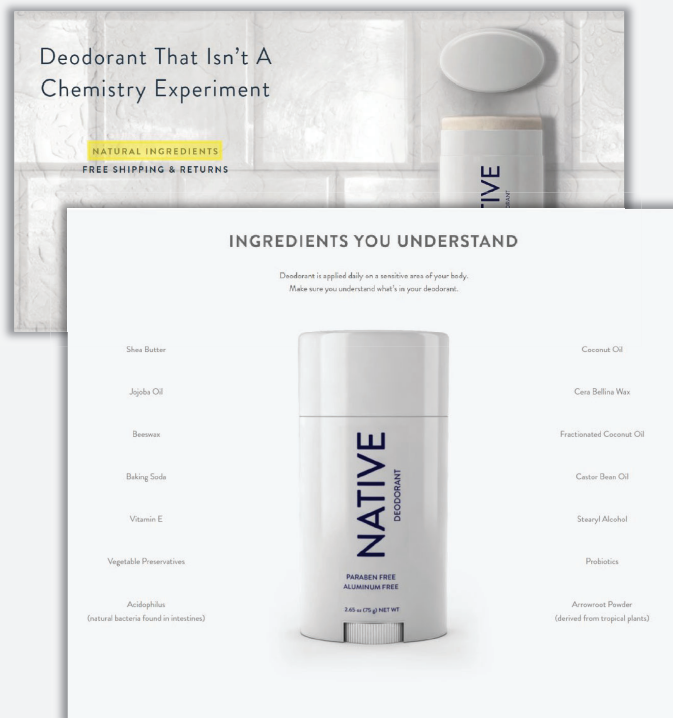
Native Grounds: No Reason to Combine Bianchi- 254 with Native

X	A POSA would have had no reason to modify Native.
X	A POSA would not have been motivated to combine Native and Bianchi-254.
X	Petitioner's silicone-free / hardness argument is again wholly deficient.
X	A POSA would not have implemented Bianchi-254's weight percentages nor had any expectation of success in doing so.
X	A POSA would not have added Phinney's magnesium hydroxide to Native.
X	Petitioner does not explain why a POSA would have added triethyl citrate or sunflower seed oil to Native.
X	It was not obvious to include tapioca starch.

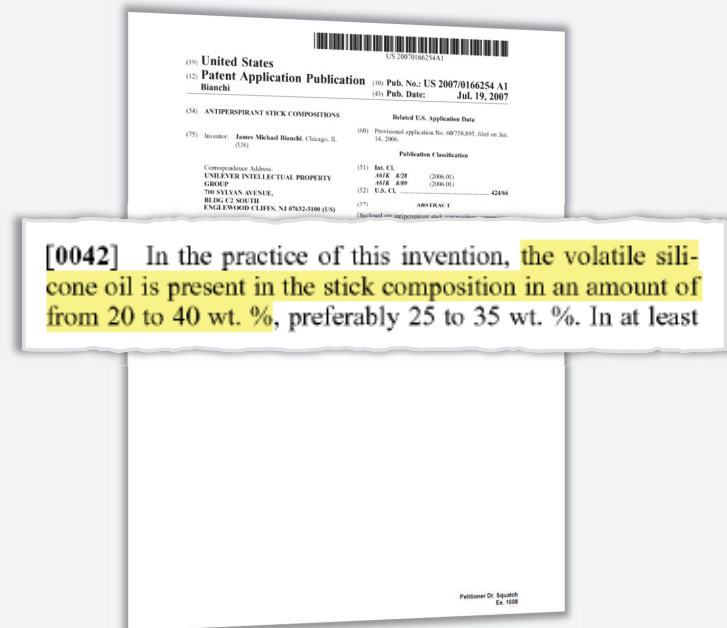
No Motivation To Combine Bianchi-254's Volatile Silicone Sticks With Native



Native



Bianchi-254





Native Grounds: No Disclosure of Claimed Hardness

x	A POSA would have had no reason to modify Native.
x	A POSA would not have been motivated to combine Native and Bianchi-254.
x	Petitioner's silicone-free / hardness argument is again wholly deficient.
x	A POSA would not have implemented Bianchi-254's weight percentages nor had any expectation of success in doing so.
x	A POSA would not have added Phinney's magnesium hydroxide to Native.
x	Petitioner does not explain why a POSA would have added triethyl citrate or sunflower seed oil to Native.
x	It was not obvious to include tapioca starch.

No Reference Teaches The Claimed Hardness Range



Total Load
of 50g

'752 Hardness Testing Procedure

Ensure the total weight of the shaft and needle is 50 ± 0.2 grams when the shaft is in free fall. Note: for modern, automated or digital systems this may be performed automatically and confirmed through annual calibration.

Total Load of
100g

Bianchi-254

Hardness Method

[0117] Stick hardness is measured using a penetrometer (model HPT 7138 from Precision) equipped with a 2.5 gm brass/steel tapered needle (DIN 51-579) on sticks that have been allowed to equilibrate for approximately 8-24 hours at a temperature of 26.7° C. Measurements are taken from 6

DIN 51-579 Standard

The weight of the test needle should be 2.5 g ± 0.05 g and that of the guide rod 97.5 g ± 0.1 g.

perature — usually 25 °C. The depth of penetration of a loaded and temperature-controlled test needle (total weight 100 g) is then determined with a penetrometer under water at the test temperature, which is main-

No Reference Teaches The Claimed Hardness Ranges



Dr. Robert Lochhead



"[I]f the Bianchi compositions were tested using the method of the '752 Patent (*i.e.*, with a 50-g total needle assembly, as opposed to a 100-g one), it is my opinion that the 50-g assembly would have a much shorter penetration distance than an assembly twice its weight."

Even If Bianchi-254 Teaches Hardness Range, Petitioner's Argument Still Fails

1 *Native is silent on hardness and specific formulation*



2 *Bianchi-254's hardness comes from prohibited ingredients*

Bianchi-254

TABLE 1

Antiperspirant Formulations		
COMPONENT (wt. %)	1	2
Castor Wax (mp 80° C.)	3.5	4
Stearyl Alcohol (mp 60°)	18	18
Polyethylene (400 mw; mp 82-84° C.)	0.3	0.5
Silica	0.3	
PPG-14 Butyl Ether	20	5
C12-C15 Alkyl Benzoate (Finsolv TN)	5	20
Dimethicone, 50 cst; (Dow Corning 200)	1	1
Sunflower Oil	0.5	0.5
Talc		
AAZG (17.8%)	24	20
Fragrance	1	1
BHT (butylated hydroxytoluene)	0.05	0.05
Cyclomethicone (Silicone 245; Dow Corning)	26.35	29.95

TABLE 5

Antiperspirant Stick Formulations		FORMULATION NO.								
COMPONENT (wt. %)	12	13	14	15	16	17	18	19		
Castor Wax (mp 80° C.)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		
Stearyl Alcohol (mp 60°)	18	18	18	18	18	18	18	18		
Polyethylene (400 mw; mp 82-84° C.)	1	1	1	1	1	1	1	1		
Stearth 100	0.5	0.5	0.5	0.5	—	—	0.5	—		
PPG-14 Butyl Ether	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5		
C12-C15 Alkyl Benzoate (Finsolv TN)	15	15	15	15	15	15	15	15		
Dimethicone, 50 cst (Dow Corning 200)	1	1	1	1	1	1	1	1		
Sunflower Oil	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		
AAZG (17.8%)	20	20	20	20	30	24	20	24		
Fragrance	1.25	1.25	1.25	1.25	1	1	1.25	1		
Fragrance Encapsulate								1.5		
BHT (butylated hydroxytoluene)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05		
Cyclomethicone (Silicone 245; Dow Corning)	28.7	27.7	28.2	29.7	20.45	26.45	28.2	24.95		
Cyclodextrin					1.5					

3 *POSA would not have expected success*

Abbott Laby's v. Sandoz, Inc., 544 F.3d 1341, 1352 (Fed. Cir. 2008)

"[K]nowledge of the goal does not render its achievement obvious."

Requires large amounts of aluminum + volatile silicones



Petitioner Appears to Admit Native is Too Hard

Petition:

In particular, the '752 Patent states that a then-“currently marketed” aluminum-free deodorant stick (described as a “comparative” example in the specification) contained all the ingredients set forth in claim 1 of the '752 Patent. The '752 Patent’s comparative example substantially matches the prior art published ingredient list for the Patent Owner’s Native deodorant, as discussed below.

'752 Patent:

TABLE 1

	Comparative Formula 1	Comparative Formula 2	Inventive Example 1	Inventive Example 2	Inventive Example 3	Inventive Example 4	Inventive Example 5
Hardness (Penetration mm * 10)	63	56	97	90	117	86	85
Caprylic/Capric Triglyceride	34.15	31.15	43.4	44.7	42.7	46.9	46.15
Arrowroot Powder	23	23	19	23	23	19	
Stearyl Alcohol	12	12	11.5	10.7	10.7		
Ozokerite					1.5	11	11.75
Castor Wax	3	4	3	3	3		
Baking Soda	12	12	12	12	6	6	
Magnesium Hydroxide					6	6	12.0
Shea Butter	6	6	2	2	2	2	2
Coconut Oil	4.75	4.75	4.5	4.5	4.5	4.5	4.5
Polyglycerol-3	2.5	3.5					
Beeswax							
Jojoba Esters	1	2					

waxes and other structurants. However, the structurants used may lead to deodorant sticks that are very hard. For example, a currently marketed product, Comparative Formula 1 below, has 34.15% liquid triglyceride, along with a number of structurants, resulting in a very hard stick, scoring 63 on a needle penetration test under ASTM D-1321 (as described herein). So while Comparative Formula 1 uses consumer-preferred natural ingredients, it does not necessarily provide

a good consumer experience when used, given its hardness. Comparative Formula 2 contains even higher levels of structurants, resulting in a harder stick with an even lower hardness score. In comparison, Inventive Examples 1-5, while comprising consumer-preferred natural ingredients, have higher hardness scores, meaning they are softer products.

Petitioner's Combination Fails To Teach A Deodorant Stick Substantially Free Of Silicones With The Proper Hardness



Claim 1

1. A deodorant stick comprising:
a. at least one antimicrobial; and
b. a structurant that is stearyl alcohol;
said stick being 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;
wherein the deodorant stick is anhydrous and is **substantially free of silicones**.



No silicones
No aluminum
Hardness under 50g Test

Bianchi-254

TABLE 1

COMPONENT (wt. %)	Antimicrobial	
	1	2
Castor Wax (mp 80° C.)	3.5	4
Stearyl Alcohol (mp 60°)	18	18
Polyethylene (400 mw; mp 82-84° C.)	0.3	0.5
Silica	0.3	
PPG-14 Butyl Ether C12-C15 Alkyl Benzoate (Finsolv TN)	20	5
Dimethicone, 50 cst; (Dow Corning 200)	1	1
Sunflower Oil	0.5	0.5
Talc		
AAZG (17.8%)	24	20
Fragrance	1	1
BHT (butylated hydroxytoluene)	0.05	0.05
Cyclomethicone; (Silicone 245; Dow Corning)	26.35	29.95

TABLE 5

Antiperspirant Stick Formulations

COMPONENT (wt. %)	FORMULATION NO.							
	12	13	14	15	16	17	18	19
Castor Wax (mp 80° C.)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Stearyl Alcohol (mp 60°)	18	18	18	18	18	18	18	18
Polyethylene (400 mw; mp 82-84° C.)	1	1	1	1	1	1	1	1
Stearth 100	0.5	0.5	0.5	0.5	—	—	0.5	—
PPG-14 Butyl Ether C12-C15 Alkyl Benzoate (Finsolv TN)	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
Dimethicone, 50 cst (Dow Corning 200)	15	15	15	15	15	15	15	15
Sunflower Oil	1	1	1	1	1	1	1	1
AAZG (17.8%)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Fragrance	20	20	20	20	30	24	20	24
BHT (butylated hydroxytoluene)	1.25	1.25	1.25	1.25	1	1	1.25	1
Cyclomethicone; (Silicone 245; Dow Corning)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Dow Corning	28.7	27.7	28.2	29.7	20.45	26.45	28.2	24.95
Cyclodextrin	1	2	1.5					



Contains silicones
Contains aluminum
Hardness under 100g Test



Native Grounds: No Expectation of Success with Bianchi-254's Weight Percentages

X	A POSA would have had no reason to modify Native.
X	A POSA would not have been motivated to combine Native and Bianchi-254.
X	Petitioner's silicone-free / hardness argument is again wholly deficient.
X	A POSA would not have implemented Bianchi-254's weight percentages nor had any expectation of success in doing so.
X	A POSA would not have added Phinney's magnesium hydroxide to Native.
X	Petitioner does not explain why a POSA would have added triethyl citrate or sunflower seed oil to Native.
X	It was not obvious to include tapioca starch.

No Motivation Or Expectation Of Success Implementing Bianchi-254's Weight Percentages



(19) United States
(12) Patent Application Publication
Bianchi
(10) Pub. No.: US 2007/0166254 A1
(43) Pub. Date: Jul. 19, 2007
(54) ANTIPERSPIRANT STICK COMPOSITIONS
Related U.S. Application Data

Bianchi-254

COMPONENT (wt. %)	FORMULATION NO.										
	1	2	3	4	5	6	7	8	9	10	11
Talc				3.5	2						2.5
AAZG (17.8%)	24	20	20	20	20	20	24	24	24	24	24
Fragrance	1	1	1	1	1	1	1	1	1	1	1

What is claimed is:

1. An antiperspirant stick composition comprising:

a) from 15 to 30 wt. % antiperspirant active;

b) carrier oil comprising:

i) volatile silicone oil, the volatile silicone oil being present in the stick composition in an amount of from 20 to 40 wt. %;

Requires large
amounts of aluminum
+ volatile silicones

Petitioner Dr. Squatch
Ex. 1008



Native Grounds: No Addition of $\text{Mg}(\text{OH})_2$

x	A POSA would have had no reason to modify Native.
x	A POSA would not have been motivated to combine Native and Bianchi-254.
x	Petitioner's silicone-free / hardness argument is again wholly deficient.
x	A POSA would not have implemented Bianchi-254's weight percentages nor had any expectation of success in doing so.
x	A POSA would not have added Phinney's magnesium hydroxide to Native.
x	Petitioner does not explain why a POSA would have added triethyl citrate or sunflower seed oil to Native.
x	It was not obvious to include tapioca starch.

Magnesium Hydroxide Claims



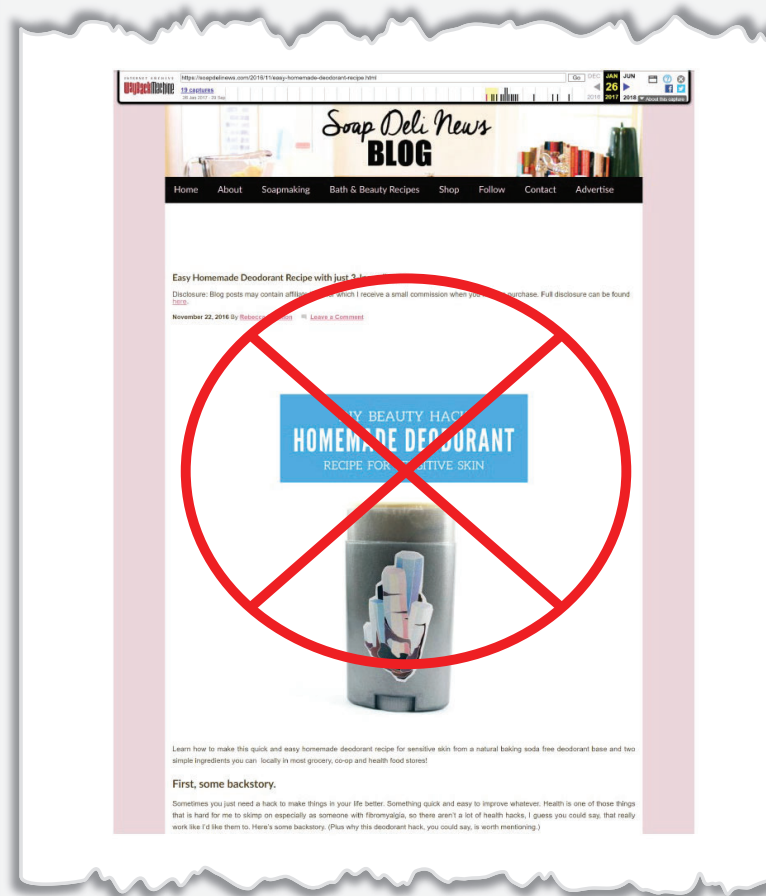
14. The deodorant stick of claim 1, wherein the at least one antimicrobial is selected from the group consisting of baking soda, magnesium hydroxide, hexamidine, magnesium carbonate, zinc carbonate, thymol, magnesium hydroxide & magnesium carbonate hydroxide, sodium carbonate, magnesium carbonate hydroxide,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

15. A deodorant stick comprising:
a. at least about 25% by weight liquid triglyceride;
b. a starch;
c. stearyl alcohol;
d. magnesium hydroxide;
e. shea butter;
f. coconut oil;
g. triethyl citrate; and
h. sunflower seed oil;
said deodorant stick being free of an aluminum salt; and
wherein said stick has a hardness from about 80 mm*10 to about 140 mm*10, as measured by penetration with ASTM D-1321 needle.

18. A deodorant stick comprising:
a. at least about 25% caprylic/capric triglyceride;
b. a starch;
c. stearyl alcohol;
d. magnesium hydroxide;
e. shea butter;
f. coconut oil;
g. triethyl citrate; and
h. sunflower seed oil;
said deodorant stick being free of an aluminum salt; and
wherein said stick has a hardness from about 80 mm*10 to about 140 mm*10, as measured by penetration with ASTM D-1321 needle.

19. A deodorant stick comprising:
a. at least about 25% of a triglyceride;
b. a starch;
c. stearyl alcohol;
d. magnesium hydroxide;
e. shea butter;
f. coconut oil;
g. triethyl citrate; and
h. sunflower seed oil;
said deodorant stick being free of an aluminum salt; and
wherein said stick has a hardness from about 80 mm*10 to about 140 mm*10, as measured by penetration with ASTM D-1321 needle.

Petitioner Has Not Shown Easy Homemade Was Publicly Accessible



Easy Homemade Does Not Teach Removal And Substitution Of Baking Soda



Easy Homemade

(I was able to find a good baking soda free melt and pour deodorant base with shea

Dr. Bozena Michniak-Kohn



Q: Yes. Do you know what natural deodorant base [Easy Homemade]'s starting with?

A: At this stage I'm not sure.

...

Q: And [Easy Homemade] doesn't talk about removing any ingredients from these sticks; she's talking about adding ingredients, right?

A: That is correct.



Native Grounds: No Addition of Triethyl Citrate or Sunflower Seed Oil

X	A POSA would have had no reason to modify Native.
X	A POSA would not have been motivated to combine Native and Bianchi-254.
X	Petitioner's silicone-free / hardness argument is again wholly deficient.
X	A POSA would not have implemented Bianchi-254's weight percentages nor had any expectation of success in doing so.
X	A POSA would not have added Phinney's magnesium hydroxide to Native.
X	Petitioner does not explain why a POSA would have added triethyl citrate or sunflower seed oil to Native.
X	It was not obvious to include tapioca starch.

A POSA Would Not Have Been Motivated To Combine Native With Anconi's Triethyl Citrate



1 Different stick technologies



Dr. Robert Lochhead

"[A] POSA would have understood that, based on **Native's** ingredient list, it is an anhydrous, wax-structured semisolid with a **triglyceride-based carrier system**, like Lesniak, **whereas Anconi is an aqueous propylene glycol- and/or alcohol-based mixture** solidified, for example, by sodium stearate."

Anconi

Accordingly, the composition may comprise for example mixtures of waxes and oils and solutions based on aqueous, propylene glycol and/or alcohol mixtures solidified for example by sodium stearate. Preferably, the solidifying agent is selected from the group consisting of a wax and sodium stearate.

2 Complex balancing act

Anconi

[0052] Sticks and solids are really complex chemical systems requiring a balance of ingredients designed to make the most of several performance factors including payout, slip or lubricity, chemical stability, softening temperature, and of course, efficacy.

A POSA Would Not Have Modified Native With Stoia To Include Sunflower Seed Oil



Petition

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



Native already contained tocopherols

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



Native already contained emollients



Native Grounds: No Addition of Tapioca Starch

X	A POSA would have had no reason to modify Native.
X	A POSA would not have been motivated to combine Native and Bianchi-254.
X	Petitioner's silicone-free / hardness argument is again wholly deficient.
X	A POSA would not have implemented Bianchi-254's weight percentages nor had any expectation of success in doing so.
X	A POSA would not have added Phinney's magnesium hydroxide to Native.
X	Petitioner does not explain why a POSA would have added triethyl citrate to Native.
X	It was not obvious to include tapioca starch.

A POSA Would Not Have Added Tapioca Starch To Native Because It Already Contains Arrowroot Powder



Petition

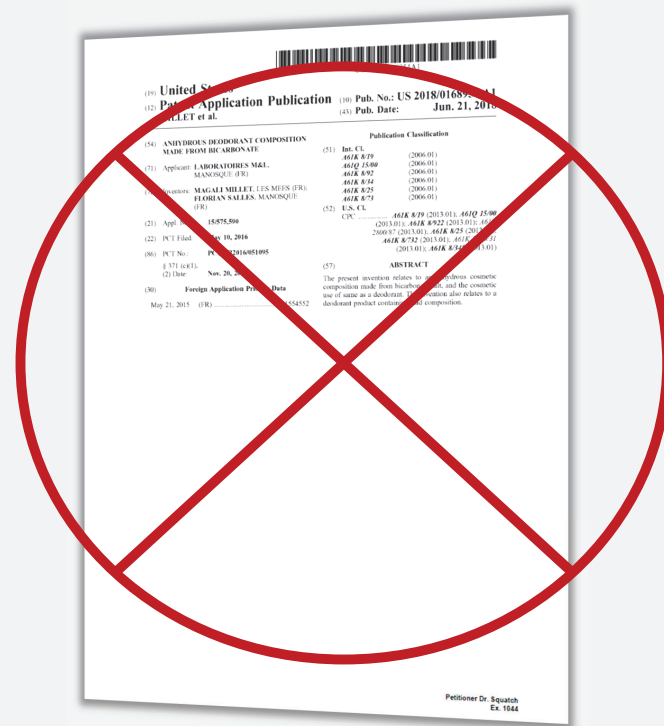
Id. It explains that starch can be used advantageously as a filler to absorb moisture and sweat in deodorants, and that tapioca starch is specifically preferred. *Id.*,

Native

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.

Millet





Squatch-Sturgis Ground

Ground 9

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

75

Failures Of Squatch-Sturgis Ground - Summary



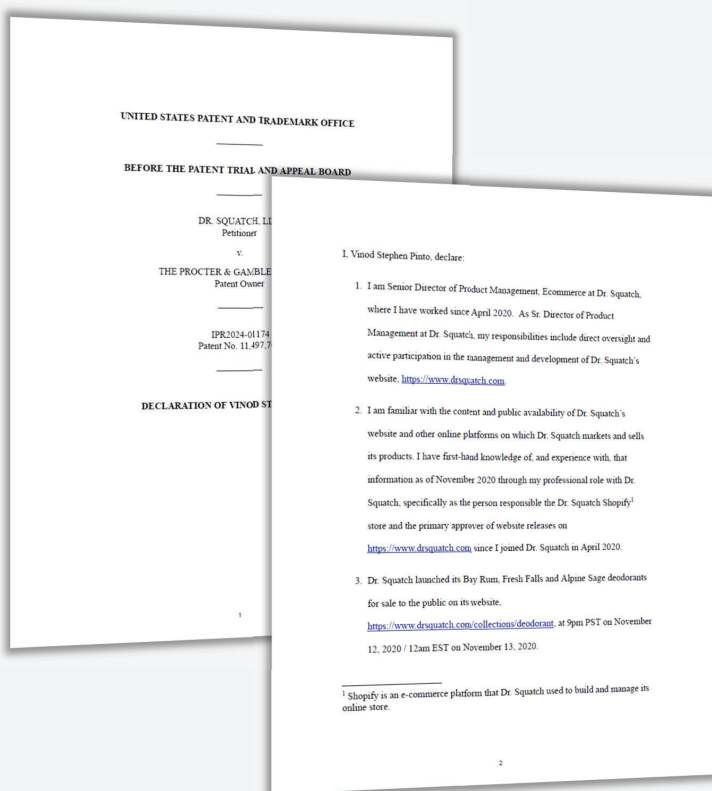
X	Squatch is not a publicly accessible "printed publication."
X	Sturgis is not prior art.
X	Petitioner's motivation to combine argument is based in hindsight.



Squatch-Sturgis Ground: Squatch Not "Printed Publication"

X	Squatch is not a publicly accessible "printed publication."
	Sturgis is not prior art.
	Petitioner's motivation to combine argument is based in hindsight.

Squatch Is Not A Publicly Accessible “Printed Publication”



Biased employee declaration



Does **NOT** show Squatch images on November 2020 webpage

Squatch Is Not A Publicly Accessible “Printed Publication”



Hulu, LLC v. Sound View Innovations, LLC, IPR2018-01039, Paper 29 at 16 (P.T.A.B. Dec. 20, 2019).



“[T]he burden is on the petitioner to identify with particularity evidence sufficient to establish that the reference was publicly accessible before the critical date of the challenged patent, and therefore that there is a reasonable likelihood that it qualifies as a printed publication.”

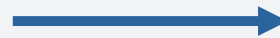


Squatch-Sturgis Ground: Sturgis Not Prior Art

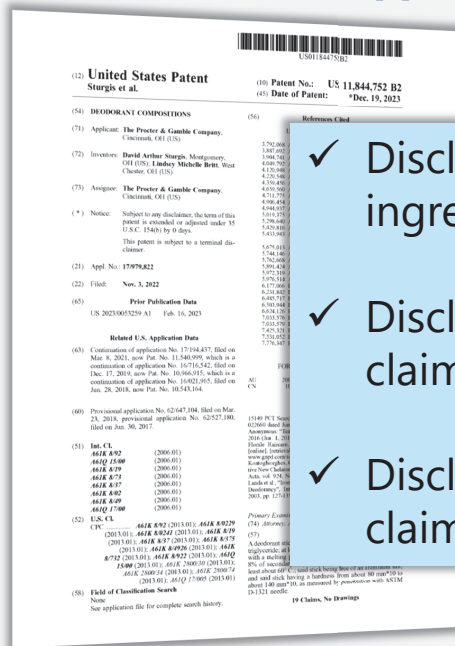
X	Squatch is not a "printed publication."
X	Sturgis is not prior art.
	Petitioner's motivation to combine argument is based in hindsight.

Sturgis Is Not Prior Art

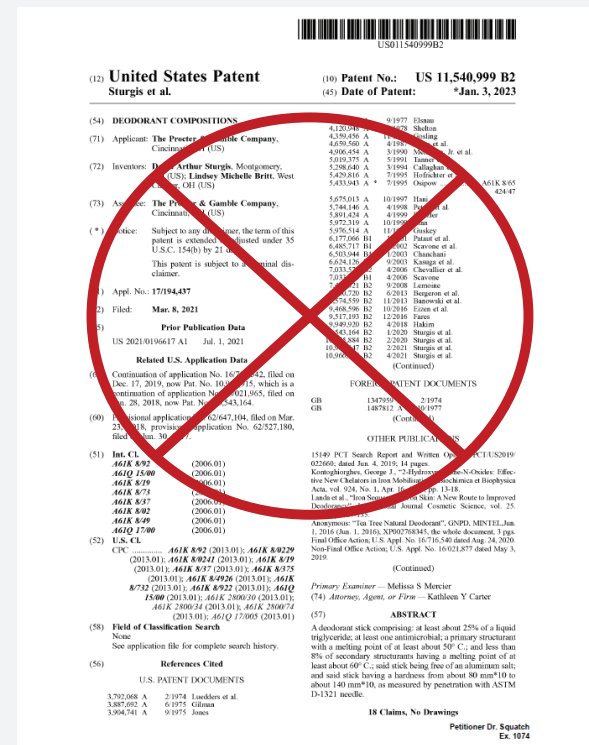
Claims 15-19 have written description support in the priority application



Sturgis is not prior art



- ✓ Discloses every claimed ingredient
- ✓ Discloses method of making claimed deodorant sticks
- ✓ Discloses reasons for choosing claimed ingredients



POR at 69-71; Sur-Reply at 27-28; Ex. 1073 at Ex. 1074 at 5:6-11, 5:53-65, 6:24-25, 6:47-50, 6:59-7:6; 7:7-19, 8:15-35, 8:36-46, Tables 1-2, cls. 1, 14.

DEMONSTRATIVE EXHIBIT – NOT EVIDENCE

81

Sturgis Is Not Prior Art



Union Oil Co. of California v. Atl. Richfield Co., 208 F.3d 989, 997 (Fed. Cir. 2000)

"[T]his court's case law require only sufficient description to show one of skill in the refining art that the inventor possessed the claimed invention at the time of filing."



Squatch-Sturgis Ground: No Motivation to Combine Showing

X	Squatch is not a “printed publication.”
X	Sturgis is not prior art.
X	Petitioner’s motivation to combine argument is based in hindsight.

Petitioner's Motivation To Combine Showing Is Conclusory And Hindsight-Based

