

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COLGATE-PALMOLIVE COMPANY,
Petitioner

v.

NOBLE INNOVATIONS NC L.L.C.,
Patent Owner

IPR2023-01254
U.S. Patent No. 8,881,332

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 8,881,332**

TABLE OF CONTENTS

TABLE OF AUTHORITIES	vi
EXHIBIT LIST	viii
I. MANDATORY NOTICES	1
II. GROUNDS FOR STANDING.....	3
III. IDENTIFICATION OF CHALLENGES AND RELIEF REQUESTED	3
IV. THE '332 PATENT.....	4
A. Effective Filing Date	4
B. Level of Ordinary Skill	4
C. Overview	4
D. Claim Listing.....	7
V. CLAIM CONSTRUCTION	8
VI. THE '332 PATENT IS NOT ENTITLED TO THE CLAIMED PRIORITY DATE	11
A. Numerous elements added by amendment lack support in the parent application.	11
B. The '332 Patent claims further lack support if “angled capsule retaining elements” is not a means-plus-function term.....	16
VII. OVERVIEW OF THE ART	18
A. Wolcott (Ex. 1009).....	18
B. Davidson (Ex. 1010)	20
C. Fitz-Gibbon (Ex. 1011)	21
D. Young (Ex. 1012).....	22
E. Sorrentino (Ex. 1013).....	24

VIII. GROUND 1: CLAIMS 1, 2, AND 5-18 ARE OBVIOUS OVER WOLCOTT AND DAVIDSON	26
A. Motivations to Combine	26
B. Wolcott and Davidson meet all claim elements.	28
1. Claims 1 and 10.....	28
2. Claims 2 and 15.....	41
3. Claim 5	43
4. Claims 6 and 12.....	44
5. Claims 7 and 11.....	45
6. Claims 8 and 13.....	45
7. Claims 9 and 14.....	46
8. Claims 16 and 17.....	48
9. Claim 18	48
IX. GROUND 2: CLAIMS 1, 2, AND 5-18 ARE OBVIOUS OVER WOLCOTT, DAVIDSON, AND FITZ-GIBBON	49
A. Motivations to Combine	49
B. Wolcott, Davidson, and Fitz-Gibbon meet all claim elements.	51
1. Claims 1 and 10.....	51
2. Claims 2, 6, and 12	56
3. Claim 5	56
4. Claims 9 and 14.....	56
5. Claims 16 and 17.....	57
6. Claims 7, 8, 11, 13, 15, and 18	58

X.	GROUND 3: CLAIMS 1, 2, AND 5-18 ARE OBVIOUS OVER YOUNG AND DAVIDSON.....	58
A.	Motivations to Combine.....	58
B.	Young and Davidson meet all claim elements.	62
1.	Claims 1 and 10.....	62
2.	Claims 2 and 15.....	75
3.	Claim 5.....	77
4.	Claims 6 and 12.....	77
5.	Claims 7 and 11.....	78
6.	Claims 8 and 13.....	79
7.	Claims 9 and 14.....	79
8.	Claims 16 and 17.....	80
9.	Claim 18.....	81
XI.	GROUND 4: CLAIMS 1, 2, AND 5-18 ARE OBVIOUS OVER YOUNG, DAVIDSON, AND FITZ-GIBBON	83
A.	Motivations to Combine.....	83
B.	Young, Davidson, and Fitz-Gibbon meet all claim elements.	85
1.	Claims 1 and 10.....	85
2.	Claims 2, 6, and 12	89
3.	Claim 5.....	90
4.	Claims 9 and 14.....	90
5.	Claims 16 and 17.....	91
6.	Claims 7, 8, 11, 13, 15, and 18	92

XII. GROUND 5: CLAIMS 1, 5, 7-11, AND 13-18 ARE OBVIOUS OVER SORRENTINO IF MEANS-PLUS-FUNCTION INTERPRETATION IS NOT ADOPTED	92
A. Sorrentino is Available as Prior Art Due to Lack of Priority.....	92
B. Sorrentino meets all claim elements.	92
1. Claims 1 and 10.....	92
2. Claim 5.....	101
3. Claims 7 and 11.....	102
4. Claims 8 and 13.....	102
5. Claims 9 and 14.....	103
6. Claim 15.....	104
7. Claims 16 and 17.....	104
8. Claim 18.....	105
XIII. GROUND 6: CLAIMS 1, 2, AND 5-18 ARE OBVIOUS OVER SORRENTINO AND FITZ-GIBBON IF MEANS-PLUS-FUNCTION INTERPRETATION IS ADOPTED	106
A. Motivations to Combine.....	106
B. Sorrentino and Fitz-Gibbon meet all claim elements.....	107
1. Claims 1 and 10.....	107
2. Claim 2.....	109
3. Claims 6 and 12.....	111
4. Claims 5, 7-9, 11, and 13-18.....	111
XIV. THERE ARE NO DISCRETIONARY FACTORS OTHERWISE FAVORING DENIAL OF INSTITUTION	111
A. § 325(d) Factors.....	111

B.	NHK-Fintiv Factors.....	113
XV.	CONCLUSION.....	115

TABLE OF AUTHORITIES

Cases

<i>Alcon Rsch. Ltd. v. Barr Labs., Inc.</i> , 745 F.3d 1180 (Fed. Cir. 2014)	12
<i>Anascape, Ltd. v. Nintendo of Am., Inc.</i> , 601 F.3d 1333 (Fed. Cir. 2010)	12
<i>Apple Inc. v. Fintiv, Inc.</i> , IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020)	113
<i>Becton, Dickinson, & Co. v. B. Braun Melsungen AG</i> , IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017)	111
<i>Gentry Gallery, Inc. v. Berkline Corp.</i> , 134 F.3d 1473 (Fed. Cir. 1998)	17
<i>Indivior UK Ltd. v. Dr. Reddy’s Labs. S.A.</i> , 18 F.4th 1323 (Fed. Cir. 2021)	15
<i>Mas-Hamilton Group v. LaGard, Inc.</i> , 21 F.Supp.2d 700 (E.D.Ky. 1997)	9
<i>Pride Solutions, LLC v. Not Dead Yet Manufacturing, Inc.</i> , IPR2013-00627, Paper 14 (PTAB March 17, 2014)	10
<i>Samsung v. Hardin</i> , IPR2022-01327, Paper 13 (PTAB Feb. 7, 2023)	13
<i>TriMed, Inc. v. Stryker Corp.</i> , 514 F.3d 1256 (Fed. Cir. 2008)	10
<i>Tronzo v. Biomet, Inc.</i> , 156 F.3d 1154 (Fed. Cir. 1998)	16
<i>Vas-Cath Inc. v. Mahurkar</i> , 935 F.2d 1555 (Fed. Cir. 1991)	12

<i>Williamson v. Citrix Online, LLC</i> , 792 F.3d 1339 (Fed. Cir. 2015)	9
---	---

Statutes

35 U.S.C. § 120	12
35 U.S.C. § 325(d)	111
Pre-AIA 35 U.S.C. § 112, sixth paragraph	8

Rules

37 C.F.R. § 42.10(b)	2
37 C.F.R. § 42.104(a).....	3

EXHIBIT LIST

No.	Exhibit Description
1001	U.S. Patent No. 8,881,332
1002	Prosecution File History of U.S. Patent No. 8,881,332 (Application No. 12/101,446)
1003	Prosecution File History of 11/840,627 (Parent Application to U.S. Patent No. 8,881,332)
1004	Prosecution File History of 14/535,442 (Continuation Application of U.S. Patent No. 8,881,332)
1005	Complaint, <i>Noble Innovations NC L.L.C. v. Colgate-Palmolive Company, et al.</i> , Case No. 8:22-cv-03373-PX (D. Md.) (filed December 30, 2022)
1006	Summons and Proof of Service of Complaint on February 22, 2023. <i>Noble Innovations NC L.L.C. v. Colgate-Palmolive Company, et al.</i> , Case No. 8:22-cv-03373-PX (D. Md.)
1007	Claim Listing
1008	Declaration of Timothy P. Fletcher in Support of Petition
1009	U.S. Patent No. 2,262,982 (Wolcott)
1010	U.S. Patent No. 2,307,493 (Davidson)
1011	U.S. Patent No. 1,346,536 (Fitz-Gibbon)
1012	U.S. Patent No. 1,995,374 (Young)
1013	U.S. Patent No. 8,240,937 (Sorrentino)
1014	Joint Stipulation to Extend Time to Answer or Otherwise Respond, <i>Noble Innovations NC L.L.C. v. Colgate-Palmolive Company, et al.</i> , Case No. 8:22-cv-03373-PX (D. Md.) (filed March 10, 2023)
1015	Scheduling Order, <i>Noble Innovations NC L.L.C. v. Colgate-Palmolive Company, et al.</i> , Case No. 8:22-cv-03373-PX (D. Md.) (filed June 20, 2023)

Colgate-Palmolive Company (“Petitioner”) petitions for *inter partes* review (“IPR”) of claims 1, 2, and 5-18 of U.S. Patent No. 8,881,332 (“’332 Patent”) owned by Noble Innovations NC L.L.C. (“Patent Owner”).

I. MANDATORY NOTICES

A. Real Parties-in-Interest

Colgate-Palmolive Company (Petitioner);

Walmart Inc. (co-defendant in underlying district court case); and

Target Corporation (co-defendant in underlying district court case).

B. Related Matters

As of the filing date of this Petition, the ’332 Patent has been asserted in *Noble Innovations NC L.L.C. v. Colgate-Palmolive Company, et al.*, Case No. 8:22-cv-03373-PX (D. Md.) (filed December 30, 2022). Ex. 1005, pp. 2, 7, 10.

The ’332 Patent is related to U.S. Application No. 11/840,627 and to U.S. Patent No. 9,808,077. The ’332 Patent issued from U.S. Patent No. 12/101,446, which is a continuation-in-part of, and claims priority to, U.S. Application No. 11/840,627. U.S. Patent No. 9,808,077 issued from U.S. Patent Application No. 14/535,442, which was filed as a continuation of the ’332 Patent application.

C. Counsel

Lead Counsel

Amy E. LaValle
Reg. No. 51,092
MUNCK WILSON MANDALA, LLP
12770 Coit Road, Suite 600
Dallas, Texas 75251
alavalle@munckwilson.com
T: 972.628.3600
F: 972.628.3616

First Backup Counsel

Keith D. Harden
Reg. No. 74,472
MUNCK WILSON MANDALA, LLP
12770 Coit Road, Suite 600
Dallas, Texas 75251
kharden@munckwilson.com
T: 972.628.3600
F: 972.628.3616

Backup Counsel

Michael C. Wilson
Texas Bar No. 21704590 (to be admitted *pro hac vice*)
MUNCK WILSON MANDALA, LLP
12770 Coit Road, Suite 600
Dallas, Texas 75251
mwilson@munckwilson.com
T: 972.628.3600
F: 972.628.3616

A power of attorney under 37 C.F.R. § 42.10(b) accompanies this Petition.

D. Service Information

Petitioner consents to electronic service at the above designated Counsel email addresses and at the following email address:

InternalColgate-Noble@munckwilson.com.

Service of any documents via post or hand-delivery may be made at: Munck Wilson Mandala LLP, 12770 Coit Road, Suite 600, Dallas, TX 75251; Telephone: (972) 628-3600; Facsimile: (972) 628-3616.

II. GROUNDS FOR STANDING

Pursuant to 37 C.F.R. § 42.104(a), Petitioner certifies the '332 Patent is available for IPR, and that Petitioner is not barred or estopped from requesting an IPR challenging the claims on the grounds identified in this Petition. This Petition is filed within one year of service of the Complaint. Ex. 1006; *see also* Ex. 1014.

III. IDENTIFICATION OF CHALLENGES AND RELIEF REQUESTED

Petitioner respectfully requests review and cancellation of claims 1, 2, and 5-18 on the following prior art and statutory grounds:

Prior Art	
U.S. Patent No. 2,262,982 (Wolcott), issued 11/18/1941;	prior art under Pre-AIA 35 U.S.C. § 102(a)-(b)
U.S. Patent No. 2,307,493 (Davidson), issued 01/05/1943;	prior art under Pre-AIA 35 U.S.C. § 102(a)-(b)
U.S. Patent No. 1,346,536 (Fitz-Gibbon), issued 07/13/1920;	prior art under Pre-AIA 35 U.S.C. § 102(a)-(b)
U.S. Patent No. 1,995,374 (Young), issued 03/26/1935;	prior art under Pre-AIA 35 U.S.C. § 102(a)-(b)
U.S. Patent No. 8,240,937 (Sorrentino), issued 08/14/2012, filed 01/24/2008;	prior art under Pre-AIA 35 U.S.C. § 102(e)

Ground	Challenged Claims	Basis
1	1, 2, and 5-18	§ 103 based on Wolcott and Davidson
2	1, 2, and 5-18	§ 103 based on Wolcott, Davidson and Fitz-Gibbon
3	1, 2, and 5-18	§ 103 based on Young and Davidson
4	1, 2, and 5-18	§ 103 based on Young, Davidson and Fitz-Gibbon
5	1, 5, 7-11, and 13-18	§ 103 based on Sorrentino
6	1, 2, and 5-18	§ 103 based on Sorrentino and Fitz-Gibbon

IV. THE '332 PATENT

A. Effective Filing Date

The '332 Patent claims an effective filing date of August 17, 2007. The '332 Patent issued from U.S. Patent Application No. 12/101,446, filed April 11, 2008, which is a continuation-in-part of Application No. 11/840,627, filed August 17, 2007. However, for the reasons below, Petitioner asserts the earliest effective filing date of the '332 Patent is April 11, 2008.

B. Level of Ordinary Skill

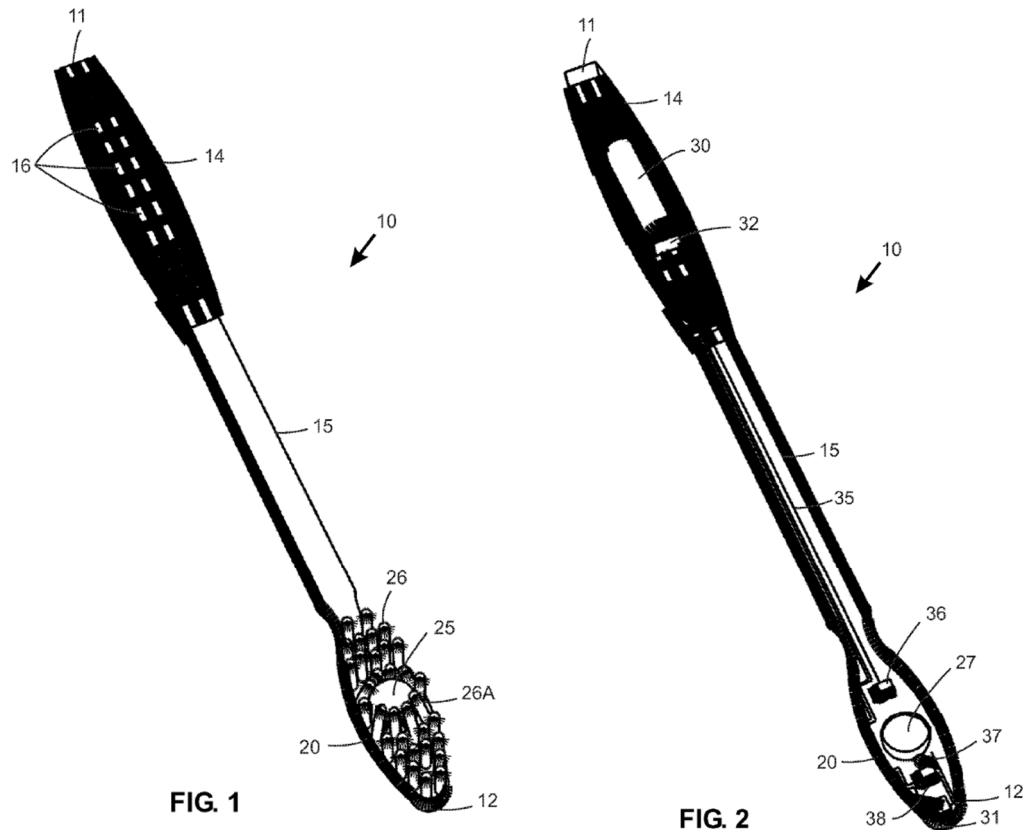
A POSITA, on or before August 17, 2007, or alternatively on or before April 11, 2008, would have had a minimum of a Bachelor's degree in Industrial Design, Mechanical Engineering, or related field and approximately 5 years of professional experience in the field of consumer product design and manufacturing. Additional graduate education could substitute for professional experience, or significant experience in the field could substitute for formal education. Ex. 1008, ¶ 44.

C. Overview

The '332 Patent concerns a toothbrush to hold oral care capsules, and an associated capsule dispenser, and seeks to simplify brushing for, and avoid messes caused by, children. *See* Ex. 1001, 1:21-2:56. The inventors do not purport to have invented oral care capsules, but admit in the Background that “oral care capsules ... are known” and provide examples. *Id.*, 1:51-2:12 (citing US2005/0260141 (“Alexander”), US7,074,390 (“MacKinnon”), US4,427,116 (“Brown”)).

The toothbrush has “handle 14,” “intermediate shaft 15,” and “brush head 20.”

Id., 4:57-62:



The brush head includes a “capsule receiving zone 25, such as may include a recess defined in the brush head 20, disposed within a plurality of angled bristles 26A.” *Id.*, 4:62-65. The angled bristles 26A are “preferably canted away from vertical in a direction toward the center of the capsule receiving zone, so as to retain an oral care capsule (not shown) insertable into the capsule receiving zone 25.” *Id.*, 4:65-5:1. The toothbrush 10 also includes “conventional straight bristles 26.” *Id.*, 5:8-9.

The claims are directed to the described toothbrush. Although not recited in the claims, the '332 Patent also describes a dispenser (shown below), and touts that

the dispenser allows children to easily load a capsule while also protecting capsules from moisture and access by children, who may liken the capsules to candy. Ex. 1001, 2:13-34.

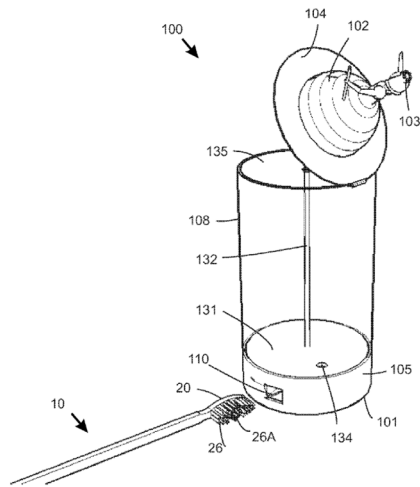


FIG. 4

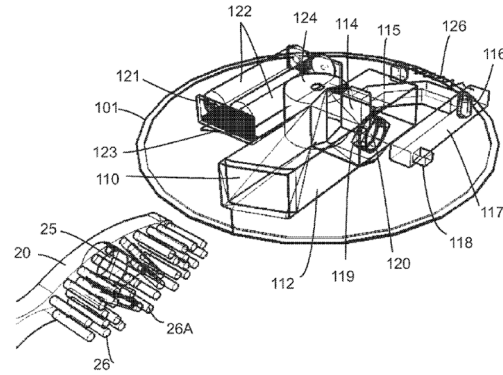


FIG. 5

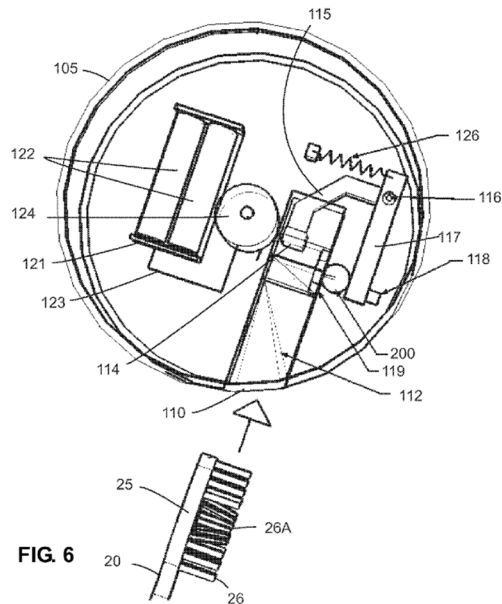


FIG. 6

In one embodiment,¹ capsules are front-loaded into the toothbrush by the dispenser. *Id.*, 7:8-42. The toothbrush is inserted into “guide tube 112,” and “bristle spreader 119” within the guide tube “spreads apart the angled bristles 26A to prepare the brush head 20 to receive an oral care capsule.” *Id.*, 7:8-23. A capsule is “pushed through a the [sic] aperture 120 of the bristle spreader 119, past the spread-apart angled bristles 26A and into the capsule receiving zone 25,” and “[u]pon removal of the brush head from the bristle spreader 119, the angled bristles 26A return to their relaxed position to contract around an oral care capsule disposed within the capsule receiving zone 25.” *Id.*, 7:8-42.

D. Claim Listing

Exhibit 1007 is a claim listing enumerating each claim element.

¹ In an alternate embodiment, capsules are back-loaded through an “aperture” covered by a “moveable retaining element” that “may include a hinged or slidable portion (e.g., a cover) that may be moved to an open position to expose an oral care capsule loading aperture” and “returned to a closed position.” Ex. 1001, 6:8-25.

V. CLAIM CONSTRUCTION

Term/Claims	Proposed Construction
“angled capsule retaining elements” (Claims 1, 2, 5-18)	Means-plus-function under Pre-AIA 35 U.S.C. § 112, sixth paragraph <u>Function</u>: retaining an oral care capsule in a capsule receiving zone <u>Structure</u>: Angled bristles: Specification at Abstract, 2:59-61, 2:65-67, 3:20-22, 4:64-5:13, 6:23-24, 6:26-30, 6:34-37, 7:19-23, 7:33-42, 9:61-10:1, 10:5-8; FIGS. 1, 4, 5, 6: Element 26A

“Angled capsule retaining elements” is subject to Pre-AIA § 112, sixth paragraph, because it uses the non-structural, generic placeholder word “element” modified by functional language (*see, e.g.*, claim 1, “capsule retaining element” and “configured to retain an oral care capsule in the capsule receiving zone”), and the claims do not recite sufficiently definite structure. *See* MPEP § 2181(I). The

structure, material, or acts corresponding to each claimed function found in the specification are identified above.² Ex. 1008, ¶ 96.

Here, “the essential inquiry is not merely the presence or absence of the word ‘means’ but whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.” *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015). “Generic terms such as ‘mechanism,’ ‘element,’ ‘device,’ and other nonce words that reflect nothing more than verbal constructs may be used in a claim in a manner that is tantamount to using the word ‘means’ because they typically do not connote sufficiently definite structure and therefore may invoke § 112, para. 6.” *Id.*, 1350.

In *Mas-Hamilton Group v. LaGard, Inc.*, “retaining element” invoked means-plus-function because there was no evidence “retaining element” had “any commonly understood meaning in the art.” 21 F. Supp. 2d 700, 729-30 (E.D. Ky. 1997). Similarly, here, the term “capsule retaining elements” has no commonly understood meaning in the art. In fact, Patent Owner amended the original claims to replace “bristles,” a known industry term, with the generic term

² Petitioner reserves the right to propose other constructions if this construction is not adopted.

“elements” modified by the functional language “capsule retaining.” Ex. 1002, 224; Ex. 1008, ¶ 97.

The claims otherwise include only minor placement/orientation descriptors, including that the retaining elements are angled, canted away from vertical towards a capsule receiving zone (claim 10), elevated above a recess, diametrically opposed (claim 1), 108 degrees apart (claim 10), and/or contact the capsule. However, the claims fail to recite the actual structure of the retaining elements. Where a generic element is used, reciting a placement/location for the element, or how the element interacts with other elements, does not save the term from invoking means-plus-function. *See Pride Solutions, LLC v. Not Dead Yet Manufacturing, Inc.*, IPR2013-00627, Paper 14 at 8 (PTAB March 17, 2014) (determining “retention means” invoked means-plus-function, even though the claim recited the retention means is located “on the plate member” and recited a pin “engaging the retention means so as to prevent longitudinal movement of the stalk stomper” because “the claim language does not specify the exact nature of the ‘retention means.’”).

Similarly, the ’332 Patent does not specify the exact nature of “capsule retaining elements.” Even with placement/orientation descriptors, the claims still require one to “resort to other portions of the specification or extrinsic evidence for an adequate understanding of the structure,” i.e., what the capsule retaining elements actually are. *See TriMed, Inc. v. Stryker Corp.*, 514 F.3d 1256, 1259-60

(Fed. Cir. 2008) (“Sufficient structure exists when the claim language specifies the exact structure that performs the functions in question without need to resort to other portions of the specification or extrinsic evidence for an adequate understanding of the structure.”).

As shown at every citation in the table above, the only structure disclosed in the '332 Patent that performs the claimed function is “angled bristles.” The term “retaining element” *is* briefly used in the specification, but for a completely different structure relating to an alternative embodiment in which a moveable (e.g., hinged or slidable) back cover is used to back-load capsules through the head. *See* Ex. 1001, 5:10-19, 6:8-25. Patent Owner erroneously, or perhaps deceptively, cited paragraphs [0033] and [0037] as support for the amendments, but these paragraphs merely refer to the back cover, which is not part of the claimed invention. *See* Ex. 1002, 228, 353-355.

Therefore, this term is subject to Pre-AIA § 112, sixth paragraph.

VI. THE '332 PATENT IS NOT ENTITLED TO THE CLAIMED PRIORITY DATE

A. Numerous elements added by amendment lack support in the parent application.

Numerous claim elements lack support in the parent application (“’627 Application” (Ex. 1003)), including elements (1)-(7) described below. The ’627 Application was filed August 17, 2007. Ex. 1003, 44. The application for the ’332

Patent was filed April 11, 2008 as a continuation-in-part of the '627 Application, and included additional Figure 11 concerning another dispenser embodiment. *Compare id.*, 27, 41, *with* Ex. 1002, 358-60, 375-76.

Claims 1-7 of the '627 Application were directed to the toothbrush (the remaining claims were directed to the dispenser), and none of the '627 Application claims, nor the specification, included any of the below-described claim elements (1)-(7) that appear in the issued claims of the '332 Patent. *Compare* Ex. 1003, 16-30, *with* Ex. 1001, 10:29-50 (claim 1), 11:25-44 (claim 10).

A claim of priority is valid only if the earlier application provides adequate written description for the claims. 35 U.S.C. § 120; *Anascape, Ltd. v. Nintendo of Am., Inc.*, 601 F.3d 1333, 1335 (Fed. Cir. 2010). As the Federal Circuit long ago noted, written description requirement comes “into play” in cases like this one, “where ... patent applicants [] seek the benefit of the filing date of an earlier-filed ... application ... for claims of a later-filed application.” *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1560 (Fed. Cir. 1991).

“The critical inquiry is whether the applicant has provided a description that ‘in a definite way identifies the claimed invention’ in sufficient detail that a person of ordinary skill would understand that the inventor was in possession of it at the time of filing.” *Alcon Rsch. Ltd. v. Barr Labs., Inc.*, 745 F.3d 1180, 1190-91 (Fed. Cir. 2014). A patent owner is not entitled to an earlier priority date where a parent

application fails to reasonably convey to a POSITA that patent owner possessed something more than what is claimed. *See Samsung v. Hardin*, IPR2022-01327, Paper 13 at 25-26 (PTAB Feb. 7, 2023).

The '332 Patent application was filed with identical claims 1-7 as the '627 Application. However, in the first office action response filed October 5, 2012, Patent Owner amended the claims to include numerous elements for the first time, including:³

(1) “angled capsule retaining elements” (discussed further below), that are “elevated above the recess.” Ex. 1002, 224.

(2) “a recess ... arranged to receive at least a portion of an oral care capsule inserted [or insertable] past the vertical bristles.” *Id.*, 224-27.

“Elevated above the recess” cannot be found in the '627 Application. *See* Ex. 1003, 16-31. Nor is the recess “arranged to receive at least a portion of the oral care capsule,” or the capsule “inserted past the vertical bristles,” found in the '627 Application. *See id.* 16-31. Instead, the '627 Application only describes that a capsule is inserted “past the spread-apart **angled** bristles” “into the “receiving zone,” not a recess specifically. *See id.*, 22, 25 (emphasis added); Ex. 1008, ¶ 102.

³ Patent Owner further added method claims 32 and 40 (issued claims 9 and 14) reciting similar elements. *Id.*, 253-54.

In the second office action response filed April 29, 2013, Patent Owner amended claim 1 to add two new elements:

- (3) “at least one pair of angled capsule retaining elements”; and
- (4) “wherein each pair of the at least one pair angled capsule retaining elements includes a first and a second angled capsule retaining element arranged along diametrically opposing sides of an oral care capsule when present in the capsule receiving zone.” Ex. 1002, 166.

Patent Owner further amended claim 33 (issued claim 10) to add:

- (5) “at least three angled capsule retaining elements”; and
- (6) “wherein each angled capsule retaining element of the at least three angled capsule retaining elements is arranged proximate to a perimeter of the capsule receiving zone at a position at least 108 degrees apart from at least one other angled capsule retaining element of the at least three angled capsule retaining elements relative to a center of the capsule receiving zone.” *Id.*, 168.

Patent Owner also added dependent claim 44 (issued as claim 18), reciting 144 degrees instead of 108 degrees. *Id.*, 169.

None of these added elements can be found in the '627 Application. *See id.*, 16-31; Ex. 1008, ¶ 104. Although Patent Owner pointed to the drawings to attempt to support this new subject matter (Ex. 1002, 171), the '627 Application does not support these claim limitations in the detail recited. “A written description sufficient

to satisfy the requirement of the law requires statement of an invention, not an invitation to go on a hunting expedition to patch together after the fact a synthetic definition of an invention.” *Indivior UK Ltd. v. Dr. Reddy’s Labs. S.A.*, 18 F.4th 1323, 1329 (Fed. Cir. 2021) (determining that claimed ranges “cobbl[ed] together after the fact” were not supported by tables in the specification). Tellingly, Patent Owner even submitted an amendment *to the specification* to attempt to support this new subject matter. Ex. 1002, 170.

In the third office action response filed December 2, 2013, Patent Owner again amended the claims to add:

(7) “wherein at least a portion of each angled capsule retaining element ... is arranged to contact the oral care capsule.” *Id.*, 105-108.

This element also cannot be found in the ‘627 Application. *See* Ex. 1003, 16-31; Ex. 1008, ¶ 105. The specification does not describe “at least a portion” contacting the capsule. *See* Ex. 1003, 22.

Based on the substantial new subject matter added during prosecution, it is clear the inventors simply did not possess this subject matter as of the filing of the ‘627 Application. Ex. 1008, ¶ 106. Nevertheless, they enjoyed the benefit of the priority claim to avoid highly relevant prior art—namely, Sorrentino.

B. The '332 Patent claims further lack support if “angled capsule retaining elements” is not a means-plus-function term.

If the Board determines “angled capsule retaining elements” does not invoke Pre-AIA § 112, sixth paragraph, Petitioner respectfully submits Patent Owner has consequently claimed structures broader than angled bristles, which is not supported by the '627 Application. The '627 Application supports only angled bristles, and, therefore, Patent Owner should not be entitled to the '627 Application filing date.

Where claims are amended to encompass subject matter broader than originally disclosed essential subject matter, there is no written description support and a claim of priority cannot be maintained. For example, in *Tronzo v. Biomet, Inc.*, a continuation patent was filed on artificial hip sockets including cup implants. 156 F.3d 1154, 1156 (Fed. Cir. 1998). The continuation claims were generic as to the cup shape, and the court concluded the parent descriptions of the invention as a “trapezoid,” “truncated cone,” or cup of “conical shape” all described the same cup shape, not three different species that could support the generically-claimed “cup.” *Id.* at 1159. The court concluded the generic and broadly-claimed “cup” encompassed more than that disclosed in the parent, and thus the continuation was not entitled to the parent filing date. *Id.* at 1160.

As another example, in *Gentry Gallery, Inc. v. Berkline Corp.*, claims concerning a sofa having two reclining seats were found not supported by the original specification because the claims did not limit the location of recliner

controls to a console between the seats, which was the only disclosed location and was disclosed as an essential element that solved a variety of shortcomings in the art. 134 F.3d 1473, 1478-79 (Fed. Cir. 1998).

Claim 1 of the '627 Application recited a “toothbrush comprising a brush head ... having a plurality of *angled bristles* adapted to retain an oral care capsule in the capsule receiving zone.” Ex. 1003, 28 (emphasis added). The '627 Application specification only referred to “angled bristles” as the structure for retaining a capsule, and “retaining element” merely appears regarding the embodiment with a moveable back cover. *Id.*, 19, 22-25.

As noted above, on October 5, 2012, in response to the first office action, Patent Owner amended the claims to include, for the first time, “capsule retaining elements” instead of “bristles.” Ex. 1002, 223-36. As discussed in Section V, every illustration and description of the toothbrush in the '627 Application discloses “angled bristles” and nothing else. *See* Ex. 1003, 16-41. Further, given that the angled bristles are the structure that retains oral care capsules in the brush head, angled bristles are an essential feature of the purported invention.

There is nothing in the '627 Application that would remotely suggest to a POSITA that the inventors had possession of a toothbrush with any structure other than “angled bristles” that is “adapted to retain an oral care capsule.” Ex. 1008, ¶¶ 107-108. Therefore, in addition to the numerous other subject matter lacking support

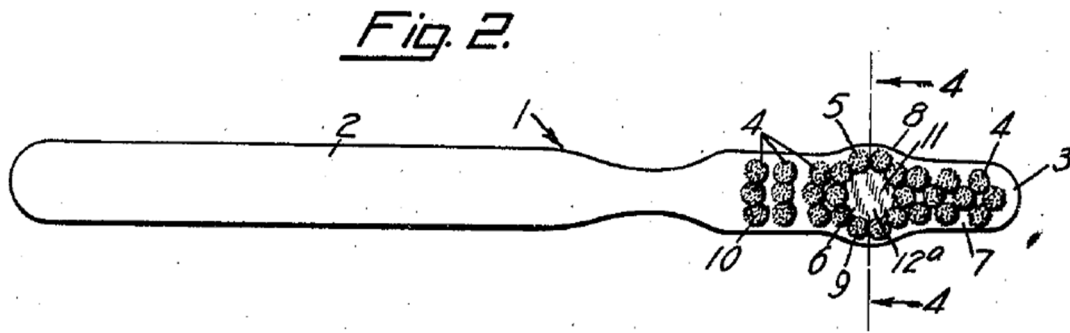
in the '627 Application identified above, if “angled capsule retaining elements” is not subject to Pre-AIA § 112, sixth paragraph, but is interpreted broadly to encompass more than angled bristles, then the '332 Patent claims much more than supported by the original '627 Application, and is not entitled to the priority date.

VII. OVERVIEW OF THE ART

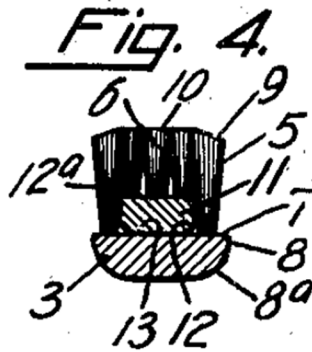
More than 60 years before the '332 Patent, toothbrushes with receiving zones for inserting solid (e.g., non-toothpaste) dentifrices such as capsules, pellets, tablets and/or powdered/granular dentifrice, were known, as were toothbrushes with angled bristles for retaining solid dentifrices. Ex. 1008, ¶¶ 61-90.

A. Wolcott (Ex. 1009)

Wolcott, issued in 1941, provided an “improved toothbrush” including a “dentifrice receiving pocket” (“central pellet recess 6”) “adapted to receive a dentifrice pellet.” Ex. 1009, 1:26-35, 2:38-45. In FIG. 2 of Wolcott, below, the central pellet recess 6 was surrounded by a set of bristles 5 disposed circularly around recess 6, with other “usual bristles 4” located elsewhere on the head. *Id.*, 2:19-24, 2:38-45.



Angled bristles retained the pellet on flat surface 7 of the head. See FIG. 4, below.

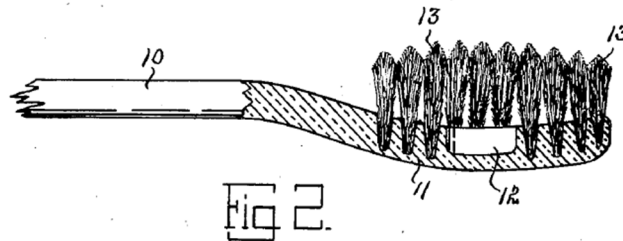
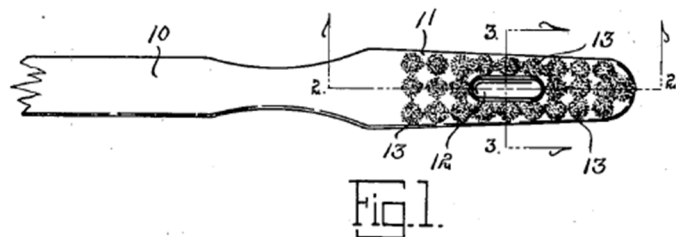


As depicted in FIG. 4, bristles 5 include both straight bristles and angled bristles that “extend clear around the pellet recess 6, in such a manner as thereby effectually to retain a pellet in said recess.” Ex. 1009, 2:49-3:1. The pellet, similarly to the ’332 Patent, is front-loaded by spreading the bristles, which then spring back to retain the pellet. *Id.*, 3:44-54 (“when the pellet is inserted in that recess, it is definitely located therein, due to the location and resiliency of the bristles, which latter causes them to swing back to reduce the size of the mouth of the recess 6 after

the insertion of the pellet, and further due to the engagement of the wider portion 12a of the pellet with the sides of the expanding bristles in the adjacent tufts.”), 3:61-67 (“As the pellet moves downward into the recess, the surfaces 12 on the pellet spring apart the bristles surrounding the recess, and these bristles then spring back in such manner as to securely position the pellet at the bottom of the recess.”). Ex. 1008, ¶¶ 64, 72-73, 84-85.

B. Davidson (Ex. 1010)

Davidson, issued in 1943, provided “a tooth brush of novel construction” with a “centrally located receiving area within the bristles and into which the powder or other dentifrice may be easily, quickly, and conveniently poured.” Ex. 1010, 1:1-10.

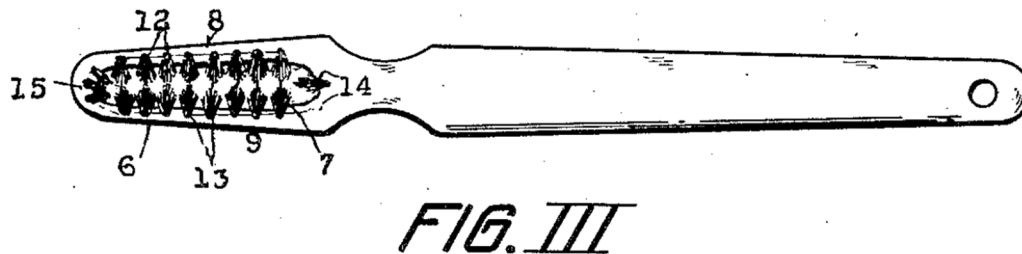


The “receiving area” included well 12 “formed in the bottom of the head portion 11,” with a plurality of bristles “surrounding the centrally located well 12.”

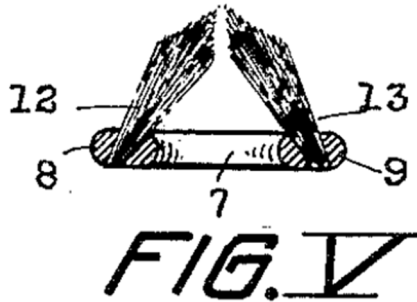
Id., 1:51-55. Dentifrice such as “powder or granular dentifrice” was poured into the receiving area, “falling downwardly” and “received and held by the well 12.” *Id.*, 2:11-14. Davidson extends its disclosure to using any type of dentifrice, stating “[b]y the well 12 being closed at all points except its top, it will have a tendency to hold the dentifrice, regardless of the type of the dentifrice, by suction.” *Id.*, 3:20-24; Ex. 1008, ¶¶ 74-75.

C. Fitz-Gibbon (Ex. 1011)

Fitz-Gibbon,⁴ issued in 1920, provided “new and useful improvements in toothbrushes” and described a toothbrush “with a relatively large opening formed in the brush back or head and bristles associated therewith to provide a pocket for holding the dentifrice or sterilizing medium employed.” Ex. 1011, 1:18-23.



⁴ Fitz-Gibbon citations are provided by page/line numbers.

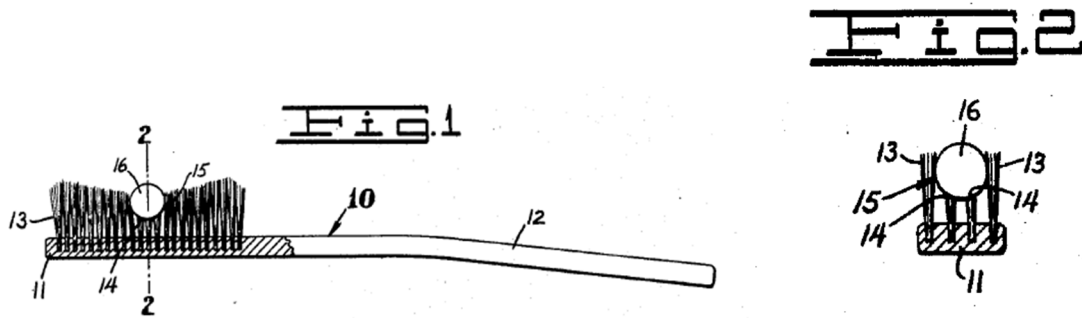


Id., FIGS. 3 and 5. Fitz-Gibbon's toothbrush had angled "brush tufts or clusters 12" on side portion 8 of the head and angled "brush tufts or clusters of bristles" on a side portion 9 of the head, such that each of the angled brush tufts 12 had a corresponding brush tuft 13 on the opposing side of the head, as shown in FIGS. 3 and 5 above, and such that "[t]he series 12 and the series 13 converge inwardly so that their tips are but slightly spaced from each other." *Id.*, 1:58-67. The angled bristles retained dry dentifrice. *Id.*, 1:79-87 ("The bristles are so disposed on the brush head as to provide a dentifrice holding chamber or pocket," and "[t]his feature is found exceedingly valuable in the treatment of pyorrhea, in which the use of a dry dentifrice is recommended."). Ex. 1008, ¶¶ 76-77, 87-88.

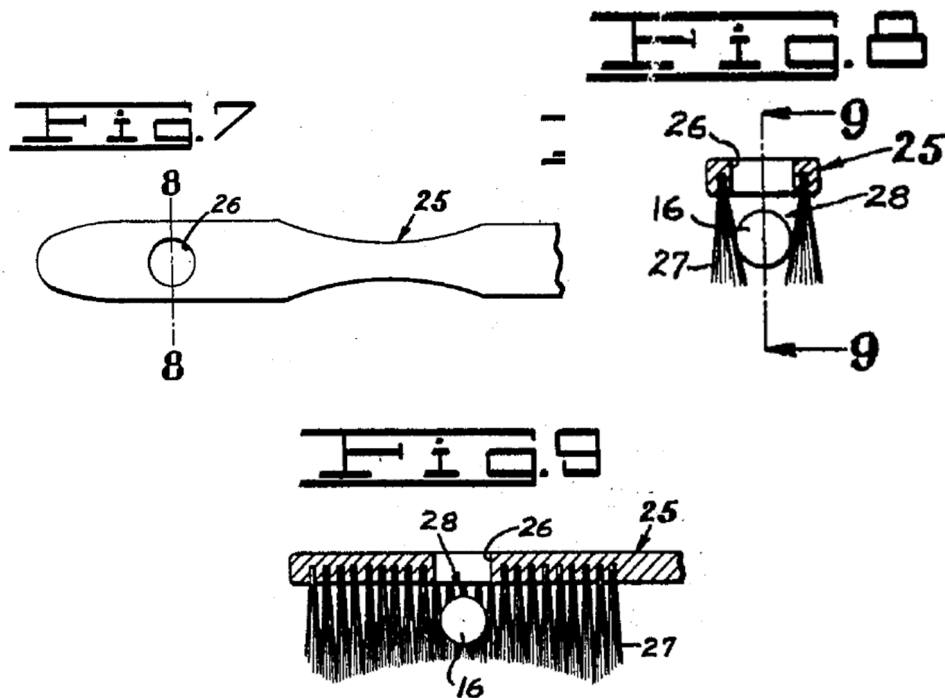
D. Young (Ex. 1012)

Young, issued in 1935, provided multiple embodiments of a "dentifrice holding toothbrush" with a "pocket" for holding a "pellet of dentifrice." Ex. 1012, 1:1-5, 1:45-50, 2:21-29, 2:30-34. Like the '332 Patent, Young included both front-loaded and back-loaded embodiments.

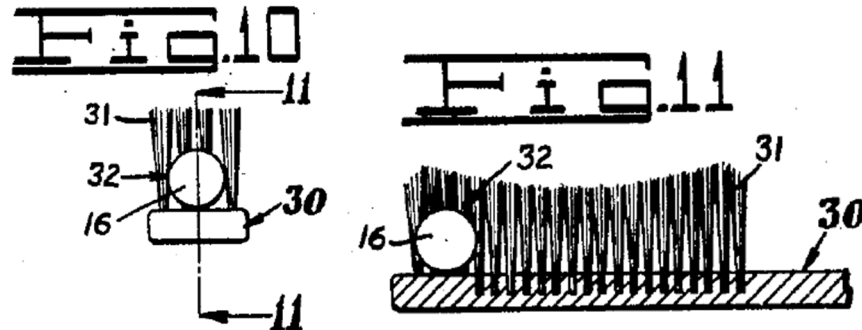
In one embodiment, "pocket 15" has shorter bristle tufts 14 than surrounding tufts 13. *Id.* 1:45-50:



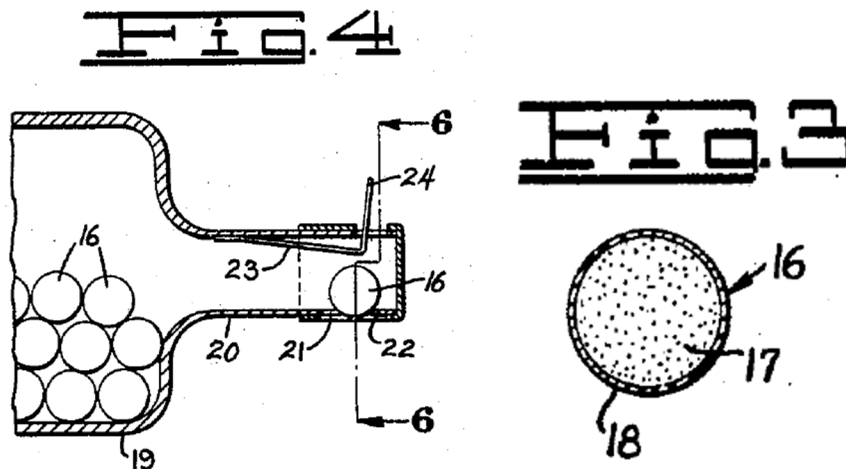
Id., FIGS. 1-2. Another embodiment included hole 26 in the brush head with bristles being "resilient and thus when a pellet is passed through the hole 26 it is engaged and retained by the bristles" in "a pocket 28." *Id.*, 2:21-29, FIGS. 7-9.



In yet another embodiment, the pellet sits on the front of the head and the bristles create “pocket 32” for the pellet. Ex. 1012, 2:30-34, FIGS. 10-11.



Young, like the '332 Patent, had a dispenser that dispensed dentifrice pellets. Ex. 1012, 2:5-14, FIGS. 3-4.



Ex. 1008, ¶¶ 65-66, 78-80, 86.

E. Sorrentino (Ex. 1013)

Sorrentino, filed January 24, 2008, and issued August 14, 2012, provided a toothbrush with “a head or carrier 80” and “a series of retaining members 81” to hold

“an oral care dispenser, such as a bead of packed dentifrice or capsule ... in place prior to use” within a “cavity” or “basin” 100. Ex. 1013, 11:35-40.

FIG. 20



FIG. 17

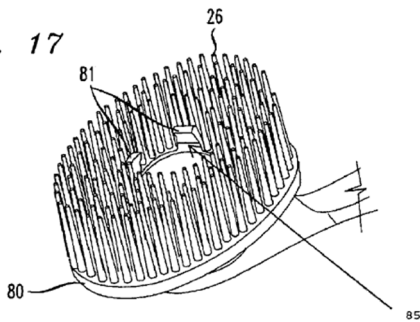


FIG. 18

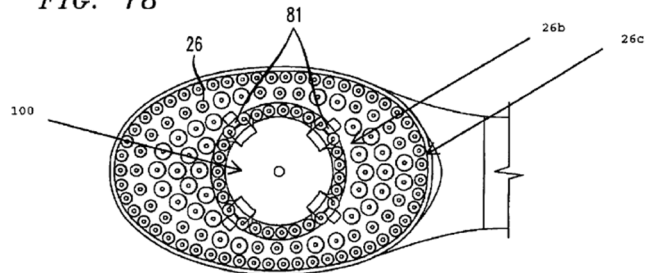
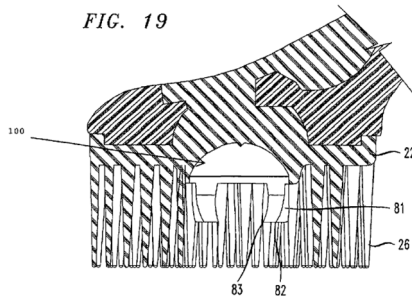


FIG. 19



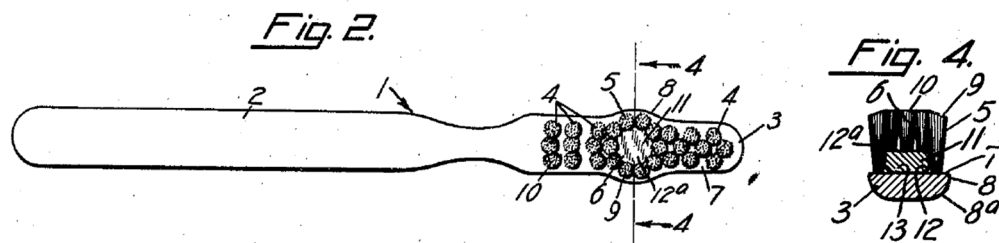
Id., FIGS. 17-20. Retaining members 81 “extend upwardly from the carrier 80” and “curve inwardly to further assist in holding the bead or capsule in place.”

Id., 12:51-56. Ex. 1008, ¶¶ 362-364.

VIII. GROUND 1: CLAIMS 1, 2, AND 5-18 ARE OBVIOUS OVER WOLCOTT AND DAVIDSON

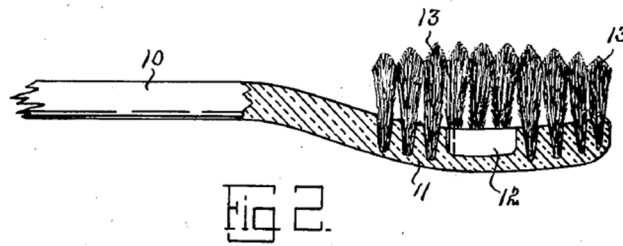
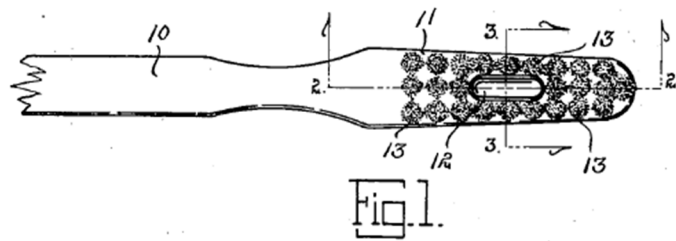
A. Motivations to Combine

Both Wolcott and Davidson disclose toothbrushes with dentifrice receiving zones. Wolcott discloses a “dentifrice receiving pocket” or “central pellet recess 6,” “adapted to receive a dentifrice pellet” and created by a circular arrangement of “bristles 5,” the pellet resting within the bristles 5 on a front surface of head. Ex. 1009, 1:26-35, 2:38-45.



Id., FIGS. 2 and 4. A primary concern of Wolcott is effectively retaining the pellet within the pocket/recess, so “should the brush be accidentally inverted before [sic] inserting in the mouth, the pellet will still remain in its recess, its portion 12a then engaging the wider expanded tuft portions or moving into engagement herewith.” *Id.*, 4:4-9; Ex. 1008, ¶¶ 116-117.

Davidson similarly discloses a “centrally located receiving area” comprising “well 12” formed in a front surface of the head with bristles “surrounding the centrally located well.” Ex. 1010, 1:1-10, 1:51-55.



Id. FIGS. 1-2. The well provides a distinct benefit: “[b]y the well 12 being closed at all points except its top, it will have a tendency to hold the dentifrice, regardless of the type of the dentifrice, by suction.” *Id.*, 3:20-24; Ex. 1008, ¶¶ 118-120.

Since Wolcott is concerned with maintaining the pellet even if the brush is turned over, a POSITA would have been motivated to combine Wolcott and Davidson to increase the ability of Wolcott’s toothbrush to retain a pellet by incorporating the well of Davidson to provide suction on the pellet, reducing movement of the pellet within the recess and decreasing chances of the pellet falling out. Ex. 1008, ¶ 121.

Wolcott and Davidson provided a POSITA with predictable options for retaining dentifrice by a toothbrush. A POSITA would have been strongly motivated to modify Wolcott’s toothbrush based on Davidson to maximize the toothbrush’s

ability to retain Wolcott's pellet. Such would require only ordinary skill and produce predictable results. *Id.*, ¶ 122.

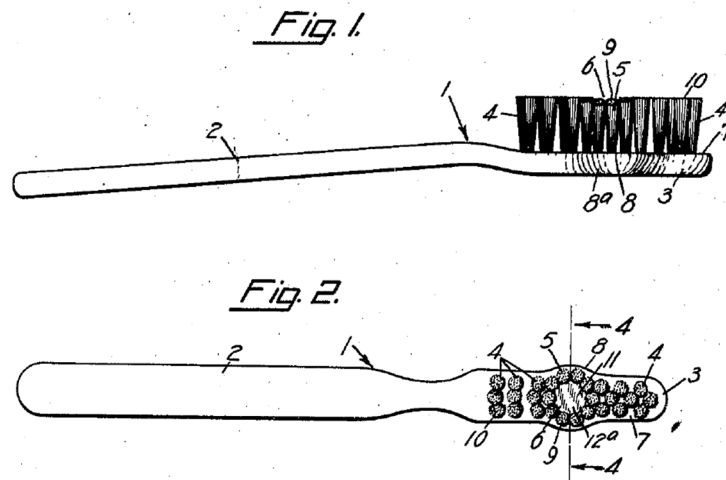
B. Wolcott and Davidson meet all claim elements.

1. Claims 1 and 10

Claims 1 and 10 recite substantially overlapping elements and are discussed together. *See* Ex. 1007.

[1.0]/[10.0] **“A toothbrush comprising a brush head that includes:”**

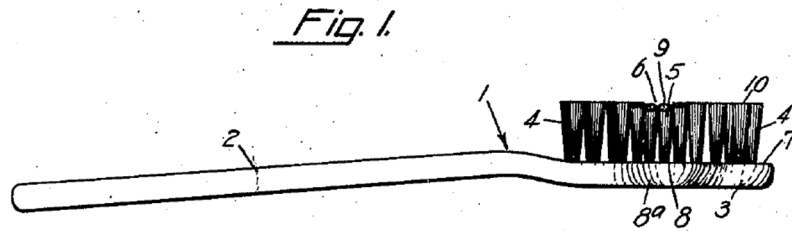
Wolcott's toothbrush has a brush head, disclosing “a toothbrush, generally indicated at 1, and having a handle 2 and bristle carrying, or back, portion 3 carrying usual bristles 4.” Ex. 1009, 2:19-24.



Ex. 1008, ¶¶ 124-125.

[1.1]/[10.1] **“a front surface”**

Wolcott's brush head includes a front surface—the surface from which bristles extend:

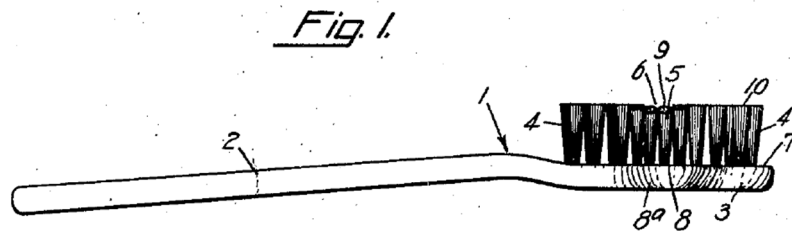


Id.

[1.2] “a back surface”

[10.2] “a back surface that opposes the front surface”

Wolcott’s brush head includes a back surface—the surface that opposes the front surface of the head:

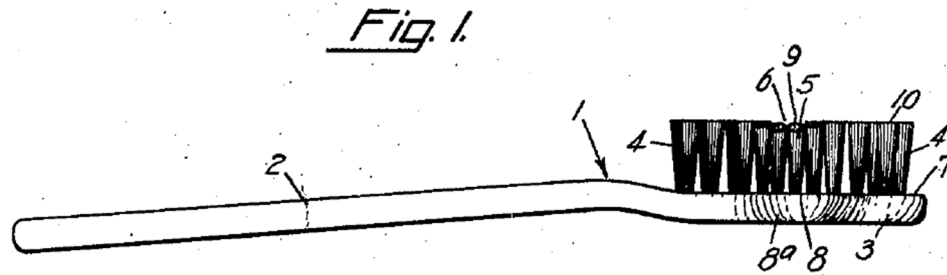


Id.

[1.3] “a plurality of vertical bristles extending upward from the front surface”

[10.3] “a plurality of bristles extending upward from the front surface and arranged distal from a center of the front surface”

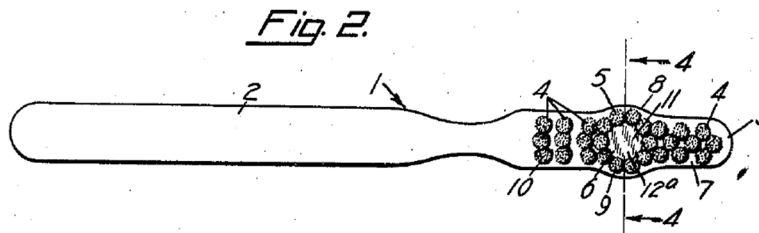
Wolcott’s brush head has a plurality of vertical bristles because it carries “usual bristles 4” that include bristles extending upward from the front surface. Ex. 1009, 2:19-24. FIG. 1 shows bristles tufts including many straight or vertical bristles:



Id., FIG. 1. Annotated FIG. 4 below also shows the vertical bristles (Ex. 1008, ¶¶ 26, 128):



The bristles 4 are arranged distal from a center of the front surface because the bristles 4 are “at the front and rear ends” of the brush head, with the other bristles 5 that form the dentifrice pocket/recess being “intermediate the bristles 4.” Ex. 1009, 2:33-39.



Id. FIG. 2. Thus, at least these bristles 4, which include vertical bristles within the bristle tufts, are arranged distal from a center of the front surface of the brush head.

Ex. 1008, ¶¶ 130-131.

[1.4] “a capsule receiving zone sized to receive an oral care capsule”

[10.4] “a capsule receiving zone”

Wolcott’s brush head includes a capsule receiving zone sized to receive an oral care capsule because Wolcott has a “dentifrice receiving pocket” or “a central pellet recess 6” “adapted to receive a dentifrice pellet.” Ex. 1009, 1:26-35, 2:38-45. In FIGS. 2, 4, and 5 of Wolcott, below, bristles 5 are disposed circularly surrounding the recess, into which a dentifrice pellet 11 is inserted. *Id.*, 2:19-24, 2:38-45, 3:18-20.

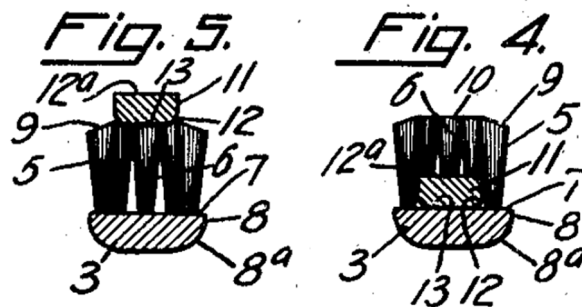
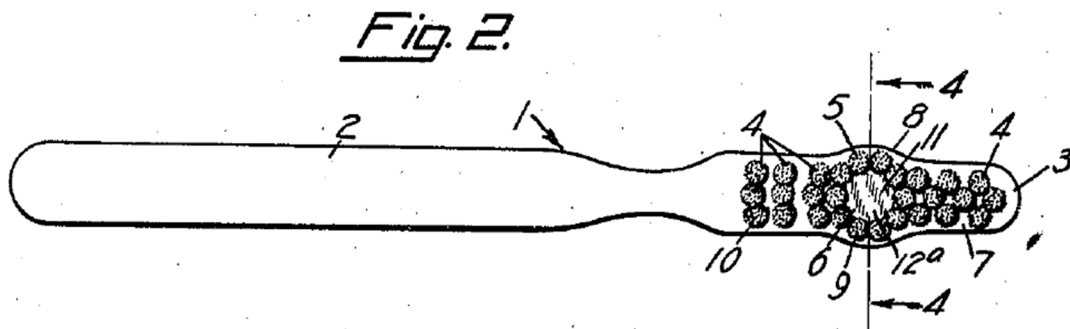
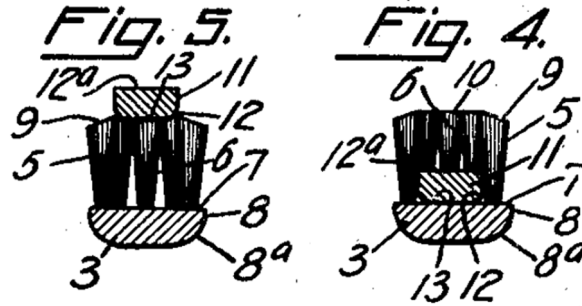
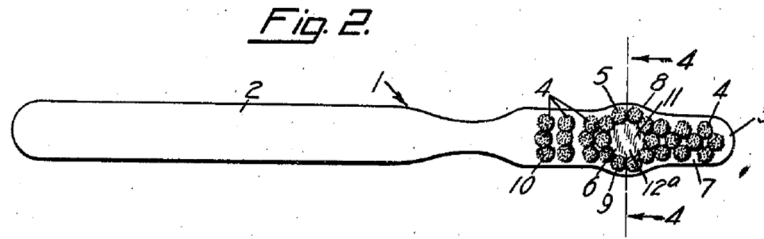


FIG. 5 shows “the pellet in process of being inserted in the pocket” and FIG. 4 shows the pellet “in position in the pocket in the bristles.” Ex. 1009, 1:53-2:3. The pellet is an oral care capsule because it “may be formed of any of various different dentifrices in powdered form, or even of hardened or enclosed tooth paste” and “is adapted to break down relatively quickly when wet and when subjected to the rubbing action incident to the use of the toothbrush in the mouth.” *Id.*, 3:18-27. To the extent the “capsule” is attributed any special meaning, the Background admits capsules were well-known (*supra* Section IV(C)). The Wolcott-Davidson combination could obviously be used with such known capsules. Ex. 1008, ¶¶ 132-135.

[1.5] “the capsule receiving zone including a recess defined in the front surface and arranged to receive at least a portion of an oral care capsule inserted past the vertical bristles”

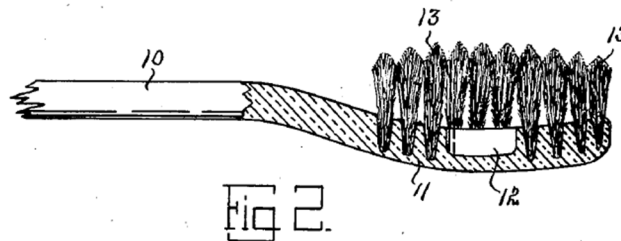
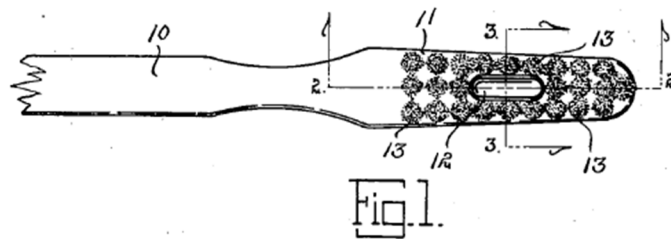
[10.5] “including a recess defined in the front surface and arranged to receive at least a portion of an oral care capsule insertable past the bristles into the recess”

As described above, Wolcott’s has a capsule receiving zone, “central pellet recess,” formed by a circular arrangement of bristles into which a pellet is inserted past the vertical bristles, such that the pellet rests on the head:



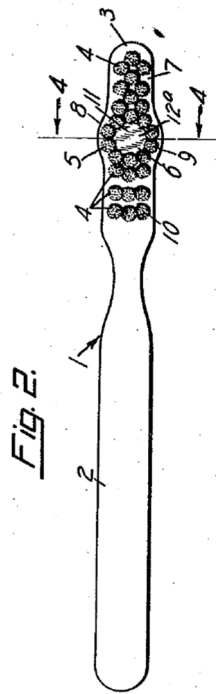
Id., FIGS. 2, 4, and 5.

Davidson similarly discloses a “centrally located receiving area,” comprising “well 12” formed in a front surface of the head with bristles “surrounding the centrally located well.” Ex. 1010, 1:1-10, 1:51-55.

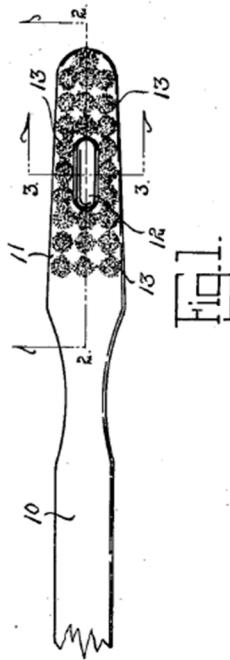


Id., FIGS. 1-2; Ex. 1008, ¶ 136-137.

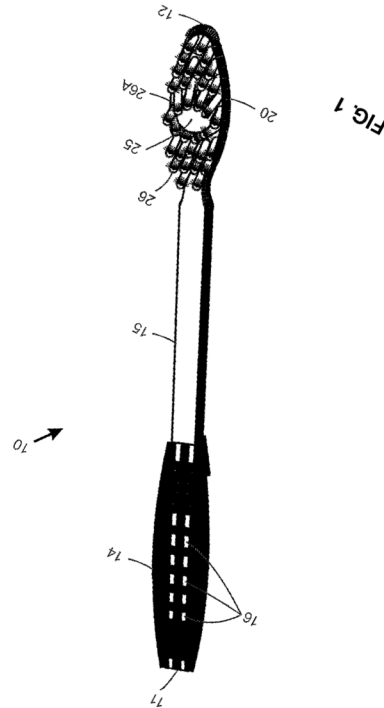
The structures of the brushes in Wolcott and Davidson are strikingly similar to the '332 Patent's toothbrush, which has a capsule receiving zone 25 including a recess in a central portion of the brush head and surrounded by bristles:



(Wolcott)



(Davidson)



('332 Patent)

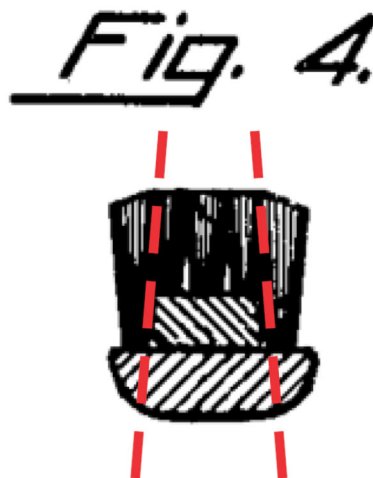
The Wolcott-Davidson combination provides a recess defined in the front surface of the brush head that is arranged to receive at least a portion of an oral care capsule inserted past the vertical bristles. As described in Section VIII(A), a POSITA would have been motivated to combine Wolcott and Davidson to increase the ability of Wolcott's toothbrush to retain a pellet by incorporating Davidson's well to provide suction "regardless of the type of [] dentifrice." Ex. 1010, 3:20-24. Although

the shapes of the receiving areas in Davidson and Wolcott differ, this shape is an obvious design choice based on the type of dentifrice to be held. Ex. 1008, ¶¶ 138-140.

[1.6] “at least one pair of angled capsule retaining elements that are elevated above the recess and configured to retain an oral care capsule in the capsule receiving zone”

[10.6] “at least three angled capsule retaining elements that are elevated above the recess, are configured to retain an oral care capsule in the capsule receiving zone, and are canted away from vertical in a direction toward a center of the capsule receiving zone”

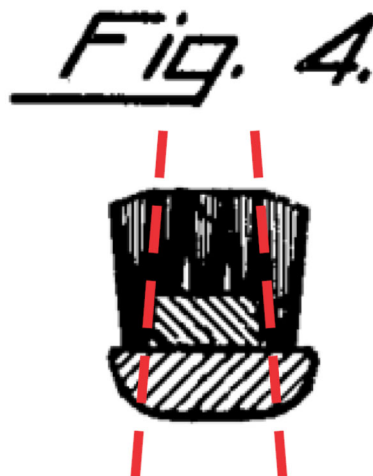
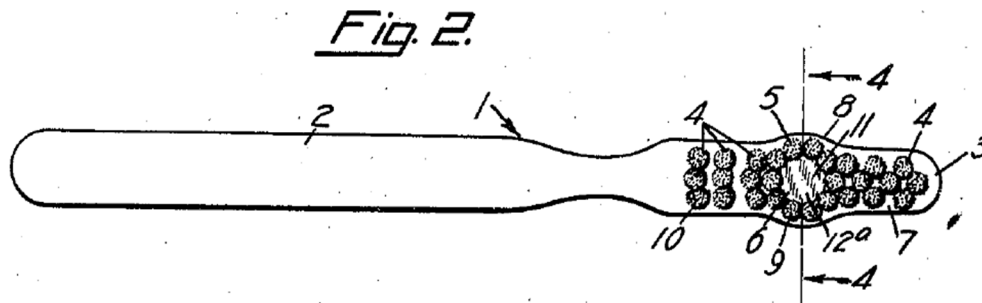
Wolcott discloses bristles including angled capsule retaining elements (angled bristles) elevated above the “dentifrice receiving pocket” and that “extend clear around the pellet recess 6, in such manner as thereby effectively retain a pellet in said recess.” Ex. 1009, 2:49-3:1.



Ex. 1008, ¶¶ 26, 142 (annotated FIG. 4).

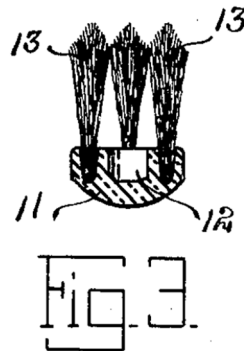
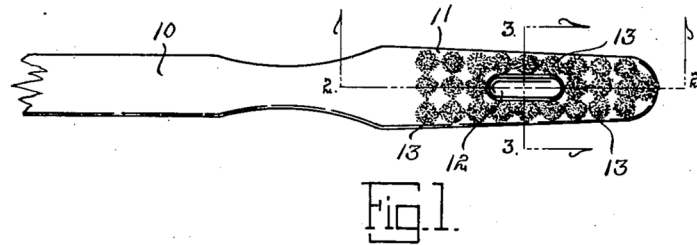
Wolcott's bristle tufts include not only straight/vertical bristles, but also angled bristles adjacent the pellet that are canted away from vertical toward the pocket/recess and contact and retain the pellet within the pocket/recess. *Id.*, ¶ 143.

Further, Wolcott has both at least one pair of angled bristles and at least three angled bristles. As shown in FIG. 2, below, many tufts of bristles (more than three) circularly surround the receiving zone, and, as shown in FIG. 4, each tuft has at least one angled bristle angled/canted towards the receiving zone. *Id.*, ¶¶ 144-145.



The Wolcott-Davidson combination still includes these features. Including a recess/well in the front surface of the brush head, as taught by Davidson, would still

provide that the Wolcott's bristles retain the pellet and are elevated above the recess. As shown in FIGS. 1 and 3 of Davidson, below, its bristles are similarly arranged around the well/recess, and thus Wolcott is readily modifiable to include a similar well with surrounding angled bristles.



Id., ¶¶ 146-147.

[1.7] “wherein each pair of the at least one pair angled capsule retaining elements includes a first and a second angled capsule retaining element arranged along diametrically opposing sides of an oral care capsule when present in the capsule receiving zone”

[10.7] “wherein each angled capsule retaining element of the at least three angled capsule retaining elements is arranged proximate to a perimeter of the capsule receiving zone at a position at least 108 degrees apart from at least one other angled capsule retaining element of the at least three angled capsule retaining elements relative to a center of the capsule receiving zone”

Wolcott discloses at least one pair of angled bristles on diametrically opposing sides of the recess:

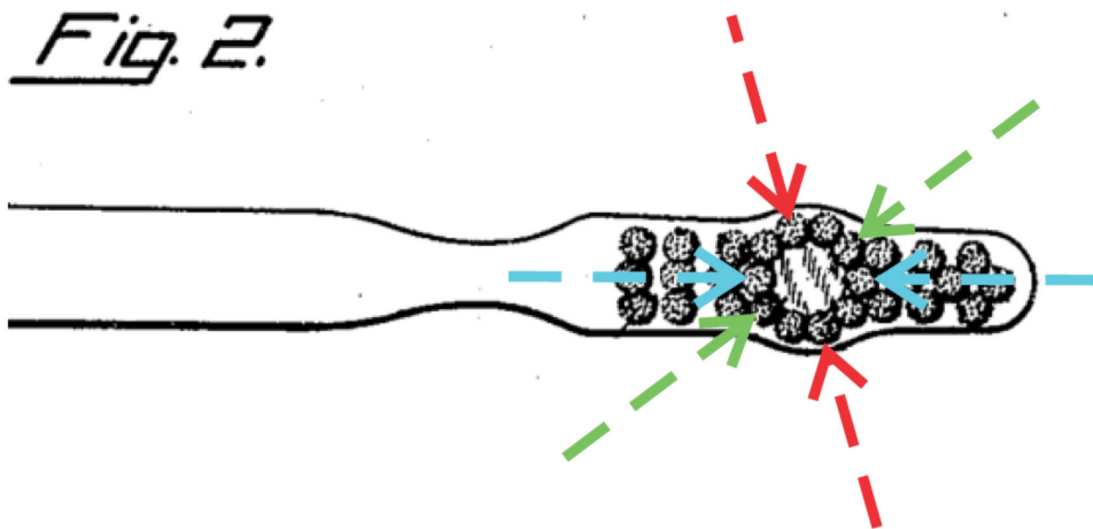
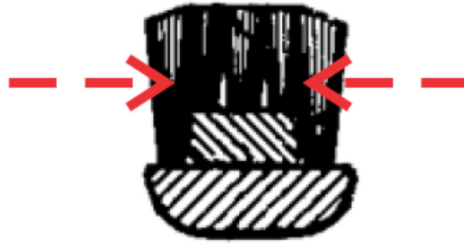


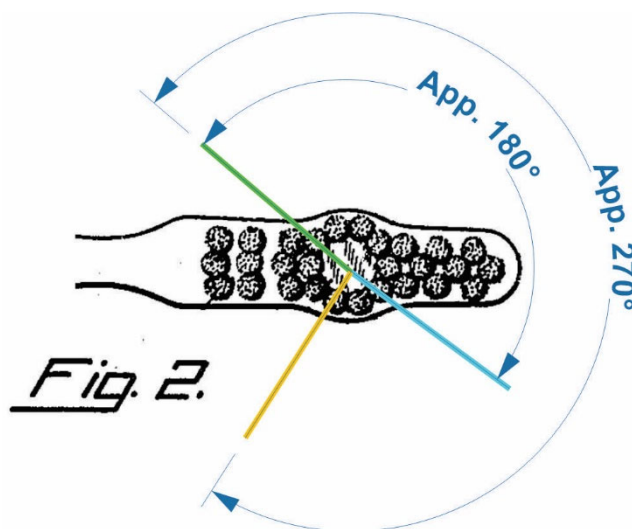
Fig. 4.



Ex. 1008, ¶¶ 26, 148-149 (annotated FIGS. 2 and 4).

As shown above, the tufts of bristles 5 are circularly arranged around the pocket/pellet, and thus the angled bristles form diametrically opposite pairs.

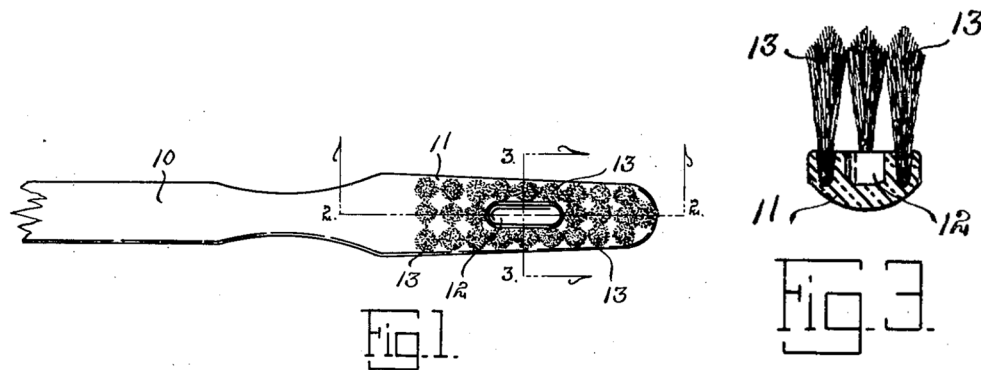
Wolcott also includes at least three angled bristles that are arranged proximate to a perimeter of the capsule receiving zone (they directly surround the recess), and each are at a position at least 108° apart from at least one other one of the at least three angled capsule retaining elements relative to a center of the recess:



Id., ¶¶ 26, 151-152.

Annotated FIG. 2 shows a first angled bristle in a first tuft (green) is more than 108° apart from another angled bristle in another tuft (blue), a second angled bristle in a second tuft (yellow) is more than 108° apart from another angled bristle in another tuft (green), and a third angled bristle in a third tuft (blue) is more than 108° apart from another angled bristle in another tuft (green). *Id.*, ¶ 153.

Davidson provides a similar structure including bristle tufts surrounding the elliptical well, as shown below:

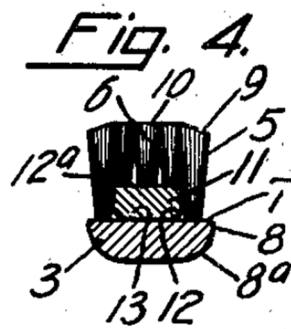


The Wolcott-Davidson combination meets these elements. *Id.*, ¶¶ 150-153.

To the extent Patent Owner asserts the prior art does not explicitly disclose the claimed degrees, the specific claimed degrees would be obvious given the prior art's circular arrangement of bristles. *Id.*, ¶ 154. The '332 Patent similarly provides no explicit disclosure for the recited degrees.

[1.8]/[10.8] “wherein at least a portion of each angled capsule retaining element of the at least [one pair of/three] capsule retaining elements is arranged to contact the oral care capsule.”

Wolcott's angled bristles contact the pellet 11:



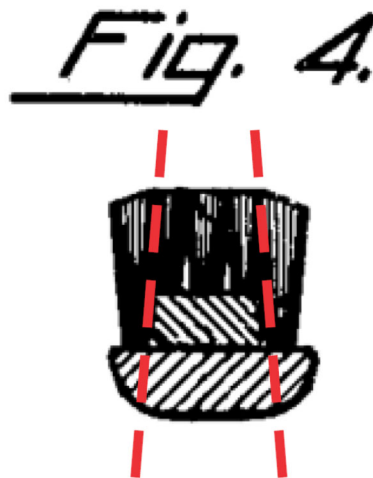
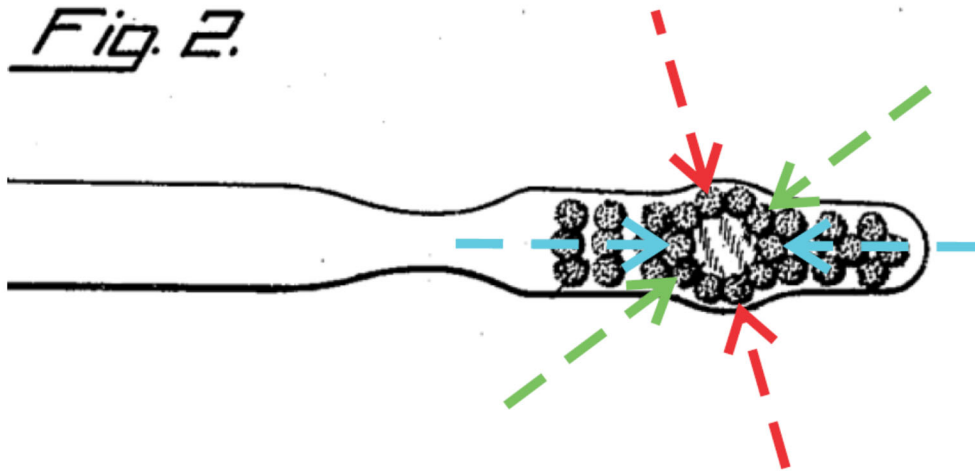
Ex. 1009, FIG. 4. This is also clear from Wolcott's specification, which describes, after the pellet is front-loaded, "the sides of the expanding bristles" have "engagement of ... the pellet" and "securely position the pellet at the bottom of the recess." *Id.*, 3:44-54, 3:61-67; Ex. 1008, ¶¶ 155-157.

2. Claims 2 and 15

[2.0] "The toothbrush of claim 1, wherein the at least one pair of angled capsule retaining elements comprises multiple pairs of angled bristles canted away from vertical in a direction toward a center of the capsule receiving zone, and the brush head includes a flexural portion adapted to permit at least some bristles of the multiple pairs of angled bristles to be spread apart so as to enable an oral care capsule to be loaded into the capsule receiving zone."

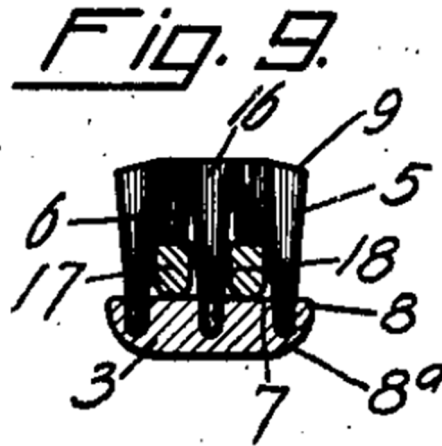
[15.0] "The toothbrush of claim 1, wherein the at least one pair of angled capsule retaining elements comprises multiple pairs of angled capsule retaining elements."

As described above, Wolcott discloses multiple pairs of angled bristles (claim 2), or angled capsule retaining elements (claim 15), canted away from vertical towards the receiving zone:



Ex. 1008, ¶¶ 26, 160-161 (annotated FIGS. 2 and 4). Further, Wolcott discloses or suggests its brush head includes a flexural portion to permit the bristles to spread apart when loading a capsule, because the bristles “spring apart,” and, “due to the location and resiliency of the bristles,” then “spring back” to “securely position the

pellet at the bottom of the recess.” Ex. 1009, 3:44-54, 3:61-67. FIG. 9 shows how the bristles are embedded in the brush head:

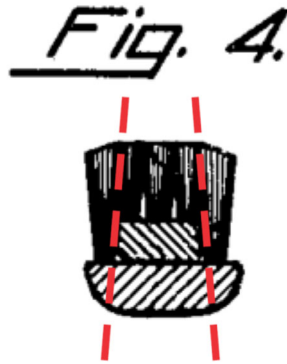


Ex. 1008, ¶¶ 162-164.

3. Claim 5

[5.0] “The toothbrush of claim 1, wherein each capsule retaining element of the at least one pair of angled capsule retaining elements comprises a retaining element canted away from vertical in a direction toward a center of the capsule receiving zone.”

As described above, Wolcott discloses bristle tufts including not only straight/vertical bristles, but also angled bristles adjacent the pellet that are canted away from vertical toward the pocket/recess to contact and retain the pellet:



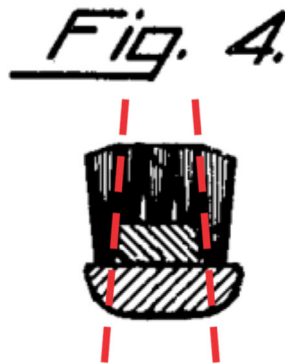
Id., ¶¶ 26, 166-167 (annotated FIG. 4).

4. Claims 6 and 12

[6.0] “The toothbrush of claim 5, wherein the at least one pair of angled capsule retaining elements comprises angled bristles canted away from vertical in a direction toward a center of the capsule receiving zone.”

[12.0] “The toothbrush of claim 10, wherein the at least three angled capsule retaining elements comprise at least three angled bristles.”

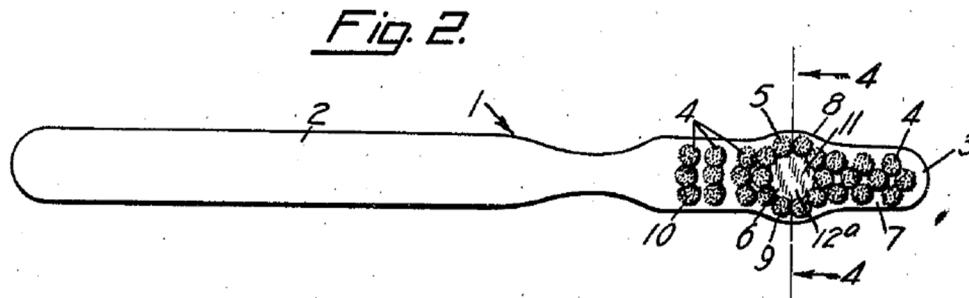
Claims 6 and 12 merely narrow “capsule retaining elements” to “angled bristles.” As described above, Wolcott has angled bristles.



Id., ¶¶ 26, 170-171.

5. Claims 7 and 11

[7.0]/[11.0] “The toothbrush of [claim 5/claim 10], wherein the at least [one pair of/three] angled capsule retaining elements [is/are] arranged between the plurality of vertical bristles and a center of the capsule receiving zone.”



As shown above, Wolcott’s toothbrush includes “usual bristles 4” at “the front and rear ends” of the brush head, such that the angled bristles within the tufts of bristles 5 adjacent the pocket/recess are “intermediate the bristles 4,” that is, between the bristles 4 and a center of the pocket/recess. Ex. 1009, 2:23-24, 2:33-39; Ex. 1008, ¶¶ 175-176.

6. Claims 8 and 13

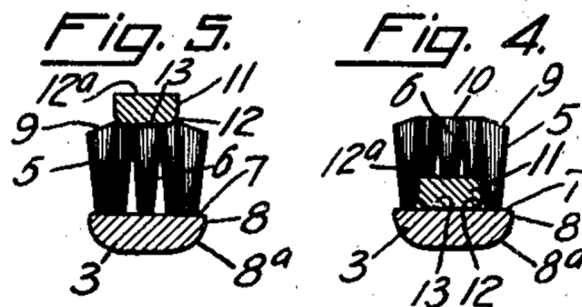
[8.0]/[13.0] “The toothbrush of [claim 1/claim 10], including an oral care capsule retained by the at least [one pair of/three] capsule retaining elements in the capsule receiving zone, wherein the oral care capsule comprises one or more of the following: a dentrifice [sic] composition, a whitening composition, an anticalculus composition, and antibacterial composition, and a breath freshening composition.”

Wolcott discloses an oral care capsule that is a dentifrice composition. Wolcott discloses “[s]till further objects of my invention are to provide an improved dentifrice pellet,” that “may be formed of any of various different dentifrices in powdered form, or even of hardened or enclosed tooth paste.” Ex. 1009, 1:26-31, 3:18-27; Ex. 1008, ¶¶ 179-180.

7. Claims 9 and 14

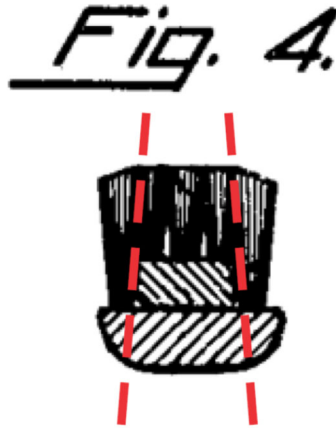
[9.0]/[14.0] “A method comprising loading an oral care capsule into a capsule receiving zone of a toothbrush according to [claim 1/claim 10] by inserting at least a portion of the oral care capsule in a direction past the vertical bristles into the recess, and retaining the oral care capsule in the capsule receiving zone using the at least [one pair of/three] angled capsule retaining elements.”

The Wolcott-Davidson combination provides a front-loading method as claimed. Wolcott discloses “[a]s the pellet moves downward into the recess, the surfaces 12 on the pellet spring apart the bristles surrounding the recess, and these bristles then spring back in such manner as to securely position the pellet at the bottom of the recess, as shown in Figure 4.” Ex. 1009, 3:61-67.



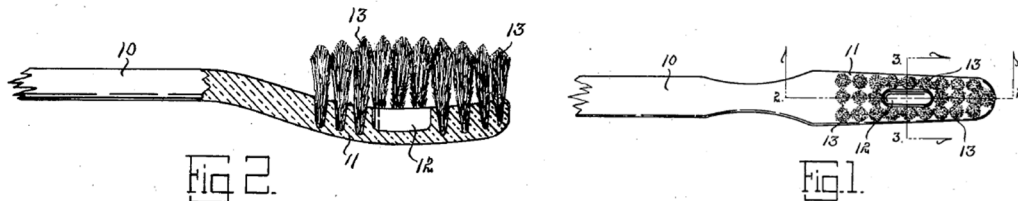
Id., FIGS 4-5.

As described above regarding the independent claims, the bristles in Wolcott include angled bristles that retain the dentifrice pellet:



Ex. 1008, ¶¶ 26, 183-184 (annotated FIG. 4).

By modifying Wolcott to include a well as taught in Davidson (see below), the method would also include loading the pellet into the well/recess.



Davidson discloses dentifrice is front-loaded past bristles into the well, stating “the bristles provide sides and ends to this receiving area in the bristles” and the dentifrice “may fall downwardly and be received and held by the well.” Ex. 1010, 2:11-27; Ex. 1008, ¶¶ 185-186.

8. Claims 16 and 17

[16.0]/[17.0] “The toothbrush of [claim 1/claim 10], wherein at least a portion of each angled capsule retaining element of the at least [one pair of/three] angled capsule retaining elements is arranged to overlap a portion of the recess of the capsule receiving zone.”

At least a portion of Wolcott’s angled bristles overlap a portion of the pocket/recess:

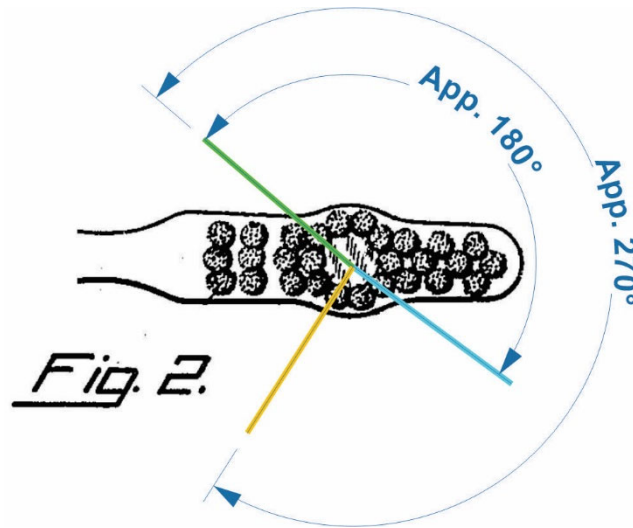


Ex. 1008, ¶¶ 26, 190 (annotated FIG. 4). This remains the case for the Wolcott-Davidson combination, as the pellet would reside in the well with the angled bristles extending over the well. *Id.*, ¶¶ 191-192.

9. Claim 18

[18.0] “The toothbrush of claim 10, wherein each angled capsule retaining element of the at least three angled capsule retaining elements is arranged proximate to a perimeter of the capsule receiving zone at a position at least 144° apart from at least one other angled capsule retaining element of the at least three angled capsule retaining elements relative to a center of the capsule receiving zone.”

As described with respect to claim 10, Wolcott's angled bristles include at least three angled bristles that are circularly arranged proximate to a perimeter of the capsule receiving zone, and each are at a position not only at least 108° apart from at least one other angled bristle, but also at least 144° apart, as recited in claim 18:



Id., ¶¶ 26, 194-198 (Wolcott annotated FIG. 2.).

IX. GROUND 2: CLAIMS 1, 2, AND 5-18 ARE OBVIOUS OVER WOLCOTT, DAVIDSON, AND FITZ-GIBBON

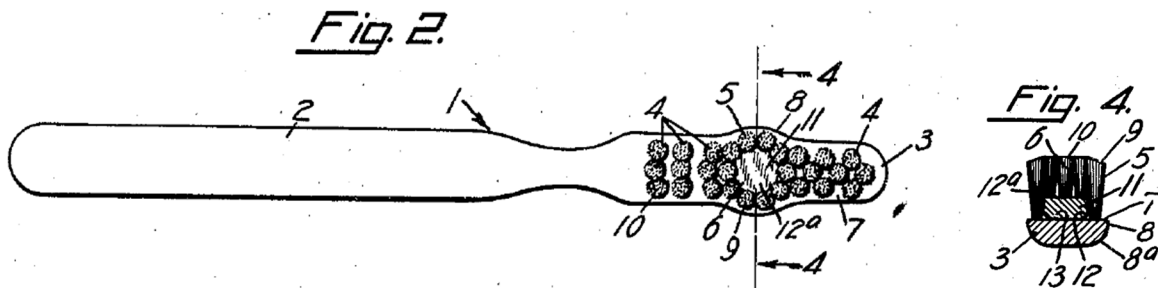
A. Motivations to Combine

Fitz-Gibbon, like Wolcott and Davidson, is concerned with retaining dry/solid dentifrice. As described in Section VII(C), Fitz-Gibbon's toothbrush has angled bristles over an opening to create a "dentifrice holding chamber or pocket" for "dry dentifrice":



Ex. 1011, 1:79-87, FIGS. 3, 5.

As described *supra* Section VIII(A), Wolcott is concerned with effectively retaining the pellet within the pocket/recess:



Ex. 1009, 4:4-9, FIGS. 2, 4.

In addition to including a well as taught in Davidson to provide suction on the pellet (Ex. 1010, 3:20-24), a POSITA would have been motivated to tilt Wolcott's tufts of bristles 5 to further enhance the pellet retaining strength of the toothbrush, such as if the user turns the toothbrush bristle-side down prior to brushing. This would require simply tilting the tufts of bristles 5 in the Wolcott-Davidson combination towards the center dentifrice receiving area of the head, as taught by Fitz-Gibbon. Ex. 1008, ¶¶ 199-204.

Wolcott teaches a pellet is front-loaded by spreading the bristles apart during insertion, which then spring back to retain the pellet. Ex. 1009, 3:44-54, 3:61-67.

Given Fitz-Gibbon discloses the bristles are “slightly spaced from each other” (Ex. 1011, 1:58-67), the pellet would still be front-loaded by spreading the bristles. Ex. 1008, ¶¶ 205-206.

Wolcott, Davidson, and Fitz-Gibbon provided a POSITA with predictable options for retaining dentifrice by a toothbrush. A POSITA would have been strongly motivated to modify Wolcott based on Davidson and Fitz-Gibbon to maximize the toothbrush’s ability to retain Wolcott’s pellet. Such would require only ordinary skill and produce predictable results. *Id.*, ¶ 207.

B. Wolcott, Davidson, and Fitz-Gibbon meet all claim elements.

1. Claims 1 and 10

Elements [1.0]-[1.5] and [10.0]-[10.5] are met for the same reasons as Ground 1. Ex. 1008, ¶ 208.

[1.6]/[10.6] “**at least [one pair of/three] angled capsule retaining elements...**”

As described in Ground 1, Wolcott discloses a circular arrangement of bristles around/above the pocket/recess, including pairs of bristles and at least three bristles:

Fig. 2.

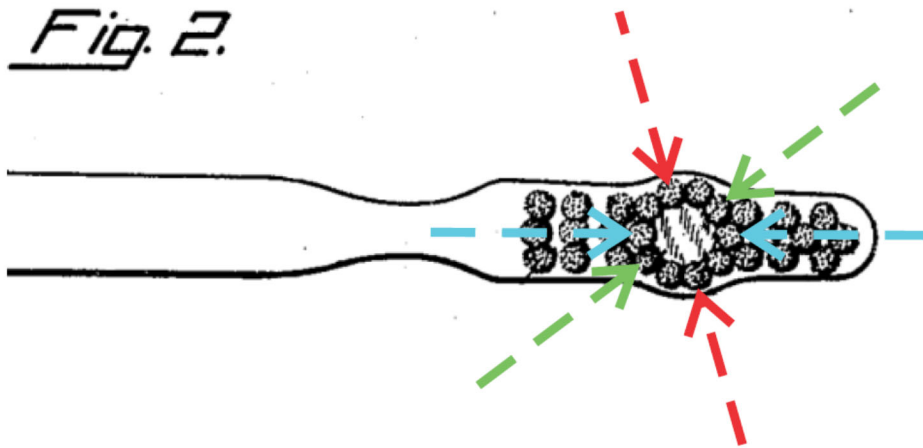
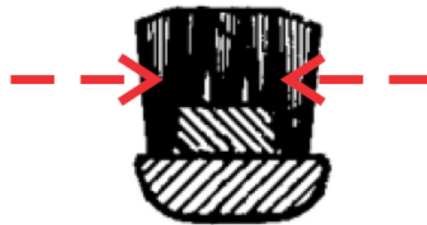
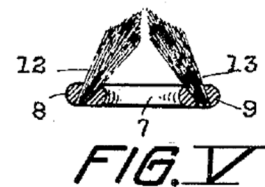
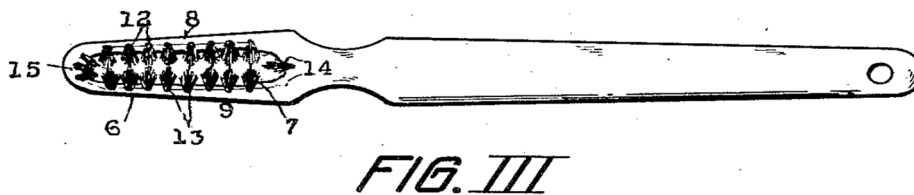


Fig. 4.



Ex. 1008, ¶¶ 26, 209-211 (annotated FIGS. 2, 4).

Fitz-Gibbons discloses a brush with angled brush tufts 12, 13 on opposing sides of a receiving zone:



Ex. 1011, FIGS 3, 5.

The Wolcott-Davidson-Fitz-Gibbon combination discloses these elements because Wolcott, as modified, includes bristles angled towards the center of the receiving zone, as taught by Fitz-Gibbon. Ex. 1008, ¶¶ 212-214.

[1.7] “**...along diametrically opposing sides...**”

[10.7] “**...at least 108 degrees apart...**”

As described above and in Ground 1, the angled bristles of the Wolcott-Davidson-Fitz-Gibbon combination include a pair of angled bristles in which first and second angled bristles are on diametrically opposing sides of the capsule in the receiving zone. See annotated FIGS. 2 and 4 of Wolcott:

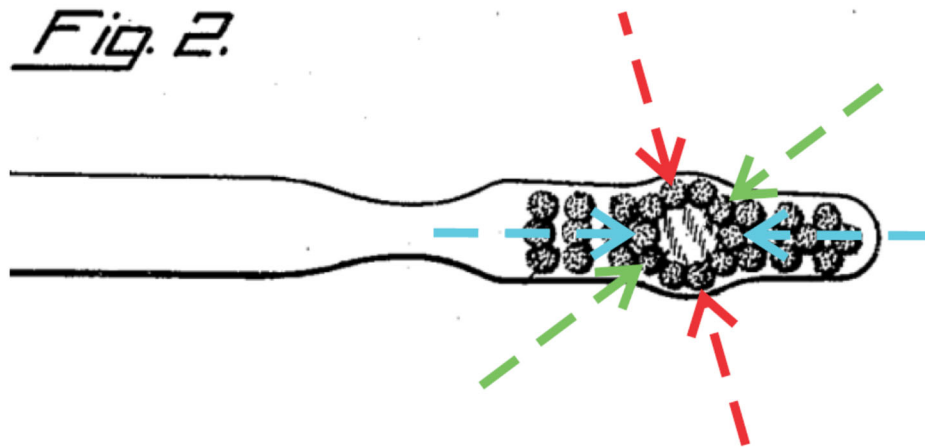
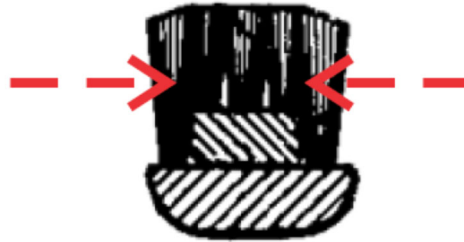
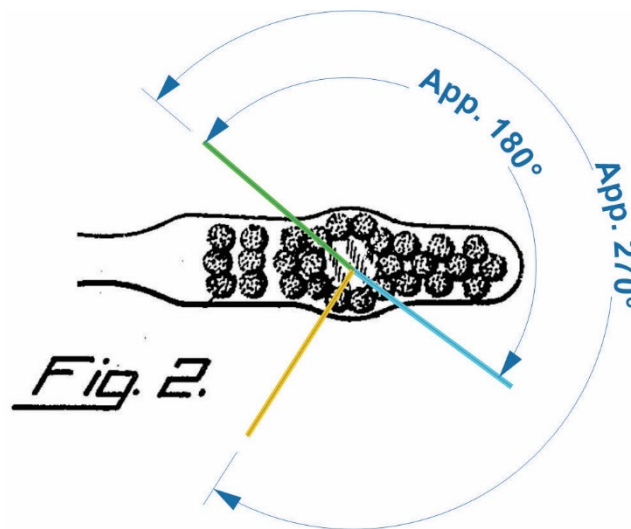


Fig. 4.



Further, the Wolcott-Davidson-Fitz-Gibbon combination retains the circular arrangement of bristles in Wolcott, and thus includes at least three angled bristles that are at least 108° apart:

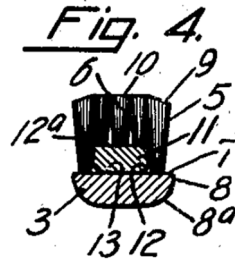


Ex. 1008, ¶¶ 26, 215-218.

[1.8]/[10.8] “...arranged to contact the oral care capsule.”

As explained in Ground 1, Wolcott describes that a pellet is front-loaded by spreading the bristles, which then spring back to retain the pellet. Ex. 1009, 3:44-54,

3:61-67. It is clear from this disclosure, and FIG. 4, below, that Wolcott's bristles contact the pellet:



Tilting the bristles as taught by Fitz-Gibbon would still allow for front-loading the pellet. As shown in FIGS. 3 and 5 of Fitz-Gibbon, below, the opposing angled tufts include a space in-between. Ex. 1011, 1:58-67.

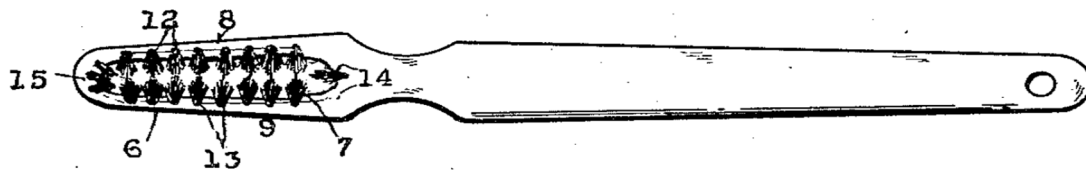


FIG. III

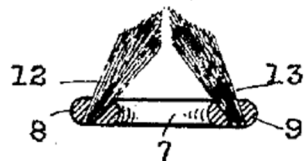


FIG. V

This would allow spreading the bristles (taught by Wolcott) to load a capsule, in a similar manner as the '332 Patent. Ex. 1008, ¶ 219-220. The tilted/angled bristles of the combination would thus contact the pellet residing in Davidson's well. *Id.*, ¶ 221-222.

2. Claims 2, 6, and 12

Claims 2, 6, and 12 narrow “capsule retaining elements” to “angled bristles.” As described above, the Wolcott-Davidson-Fitz-Gibbon combination has angled bristles. For the same reasons as Ground 1, the other elements of Claims 2, 6, and 12 are also met. *Id.*, ¶ 224.

3. Claim 5

As described above, Fitz-Gibbons discloses angled bristles on opposing sides of a receiving zone:



Ex. 1011, FIGS. 3 and 5.

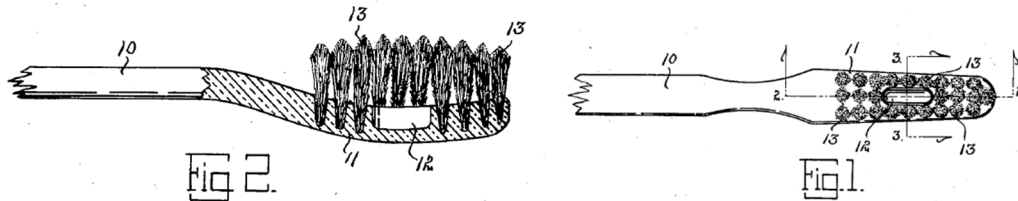
As modified using the teachings of Fitz-Gibbons to tilt the bristles towards a center of a receiving zone, the bristles 5 of Wolcott would thus include angled retaining elements canted away from vertical in a direction toward a center of the capsule receiving zone. Ex. 1008, ¶¶ 226-228.

4. Claims 9 and 14

As described above, the Wolcott-Davidson-Fitz-Gibbon combination provides a front-loading method as claimed. Wolcott discloses a pellet is front-loaded by spreading the bristles apart during insertion, which then spring back to

retain the pellet. Ex. 1009, 3:44-54, 3:61-67. Tilting the bristles as taught by Fitz-Gibbon would still allow front-loading the pellet. Ex. 1008, ¶¶ 231-232.

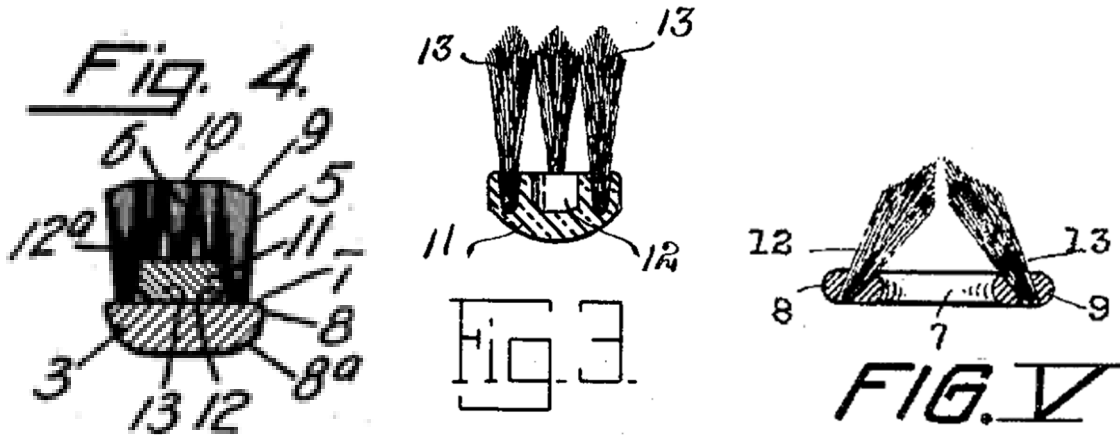
By modifying Wolcott to include a well as taught in Davidson (see below), the method would also include loading the pellet into the well/recess.



Davidson discloses dentifrice is front-loaded past bristles into the well, stating “the bristles provide sides and ends to this receiving area in the bristles” and the dentifrice “may fall downwardly and be received and held by the well.” Ex. 1010, 2:11-27. Ex. 1008, ¶¶ 233-235.

5. Claims 16 and 17

In the Wolcott-Davidson-Fitz-Gibbon combination, the angled bristles overlap the recess/well towards a center of the recess/well. All three references show bristles overlapping a receiving zone/recess:



Ex. 1008, ¶¶ 238-240.

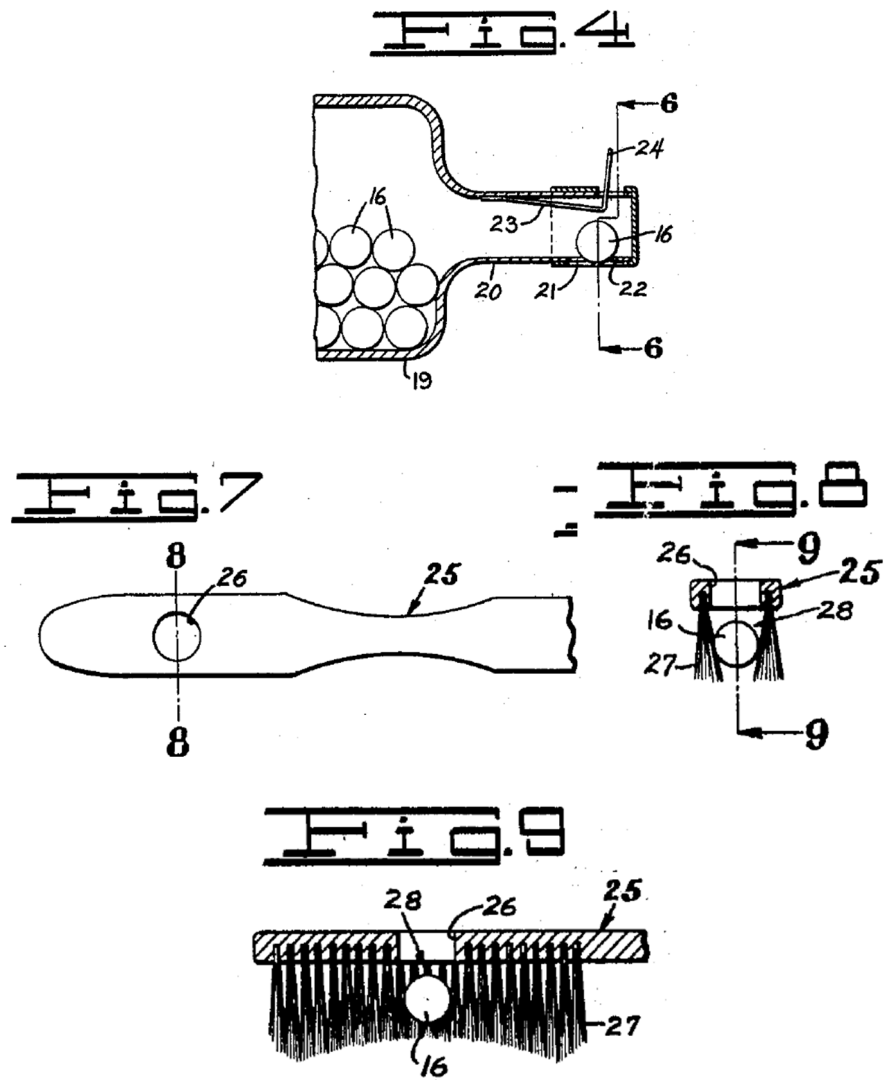
6. Claims 7, 8, 11, 13, 15, and 18

Dependent claims 7, 8, 11, 13, 15, and 18 are met for the same reasons as Ground 1. Ex. 1008, ¶ 223.

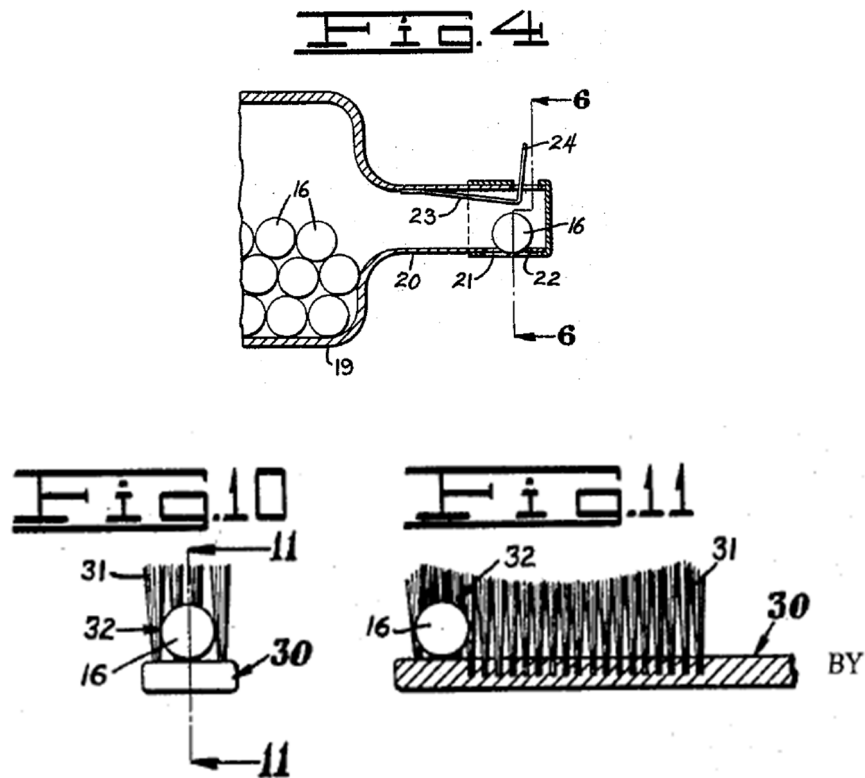
X. GROUND 3: CLAIMS 1, 2, AND 5-18 ARE OBVIOUS OVER YOUNG AND DAVIDSON

A. Motivations to Combine

Both Young and Davidson disclose toothbrushes with dentifrice receiving zones. As described in Section VII(D), Young discloses multiple embodiments including (1) an embodiment (FIGS. 7-9) in which a pellet 16 is dispensed and back-loaded through a hole 26, bristles 27 surround hole 26 to form pocket 28, and pellet 16 is “engaged and retained by the bristles” (Ex. 1012, 2:21-29):

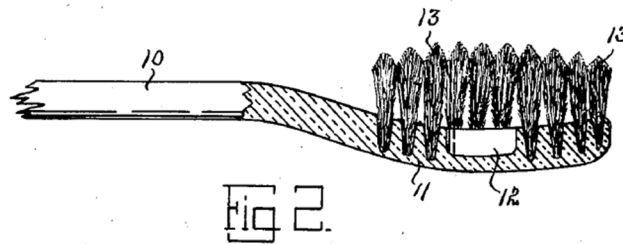
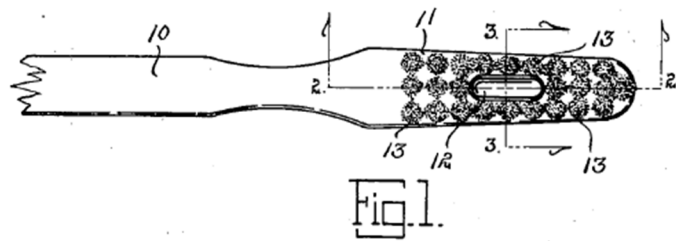


and (2) an embodiment (FIGS. 10-11) in which pellet 16 is front-loaded and rests on the brush head, with the surrounding bristles 31 "forming a pocket 32 in which the pellet 16 will be retained in place by the resiliency of the bristles" (*Id.*, 2:30-34):



The primary concerns of Young are to “provide a tooth brush with means for receiving a dentifrice pellet” and to “provide a tooth brush including bristles wherein a portion of the bristles are arranged to form a pocket for the reception of a pellet of dentifrice.” *Id.*, 3-9. Ex. 1008, ¶¶ 241-243.

Davidson discloses a “centrally located receiving area” for receiving dentifrice, comprising “well 12” in a front surface of the head with bristles “surrounding the centrally located well.” Ex. 1010, 1:1-10, 1:51-55.



The well provides a distinct benefit: “[b]y the well 12 being closed at all points except its top, it will have a tendency to hold the dentifrice, regardless of the type of the dentifrice, by suction.” Ex. 1010, 3:20-24; Ex. 1008, ¶¶ 244-246.

Since Young is concerned with effectively retaining a pellet, a POSITA would have been motivated to combine Young and Davidson to increase the ability of Young’s toothbrush to retain a pellet (such as if the toothbrush is turned upside down) by incorporating Davidson’s well to provide suction on the pellet, reducing movement of the pellet and chances of the pellet falling out. Ex. 1008, ¶ 247.

For example, a POSITA would have been motivated to modify the embodiment of Young, shown in FIGS. 10 and 11, in which the pellet is front-loaded through the bristles, by moving pocket 32 to a center of the brush head, and to

include a well in the center of the brush head, as taught in Davidson, to allow for more effective retaining of the pellet. *Id.*, ¶ 248.

Alternatively, a POSITA would have been motivated to modify the embodiment of Young shown in FIGS. 7-9 by replacing the hole 26 with a well as taught by Davidson. Although this particular embodiment of Young includes back-loading the pellet, Young (consistent with the disclosure of Davidson) clearly considers front-loading the pellet easily achievable, since the other two embodiments in Young are front-loaded. *Id.*, ¶ 249.

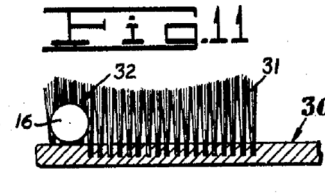
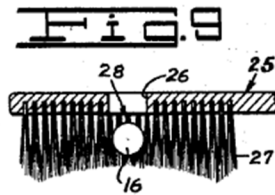
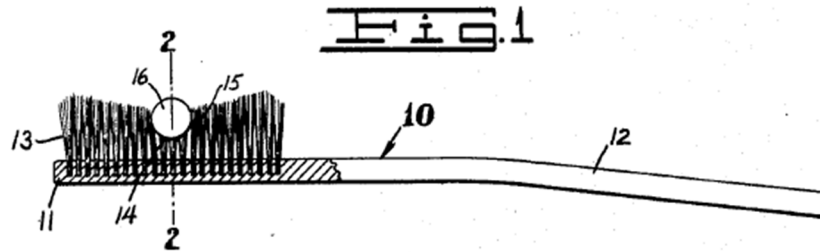
Young and Davidson provided a POSITA with predictable options for retaining dentifrice by a toothbrush. A POSITA would have been strongly motivated to modify Young's toothbrush based on Davidson to maximize the toothbrush's ability to retain Young's pellet. Such would require only ordinary skill and produce predictable results. *Id.*, ¶ 250.

B. Young and Davidson meet all claim elements.

1. Claims 1 and 10

[1.0]/[10.0] **“A toothbrush comprising a brush head...”**

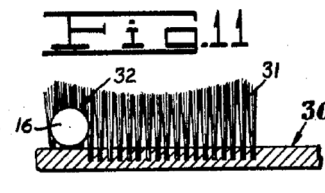
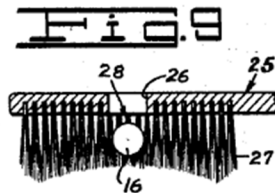
Young's embodiments include “a head 11 and a handle 12,” the head having “a plurality of bristle tufts 13.” Ex. 1012, 1:36-40. See FIGS. 1, 9, and 11:



Ex. 1008, ¶¶ 252-253.

[1.1]/[10.1] “a front surface”

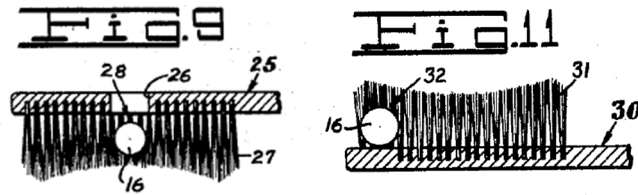
Young’s brush head includes a front surface—the surface from which bristles extend. See FIGS. 9 and 11:



Id.

[1.2]/[10.2] “a back surface...”

Young’s brush head includes a back surface—the surface that opposes the front surface of the head. See FIGS. 9 and 11:

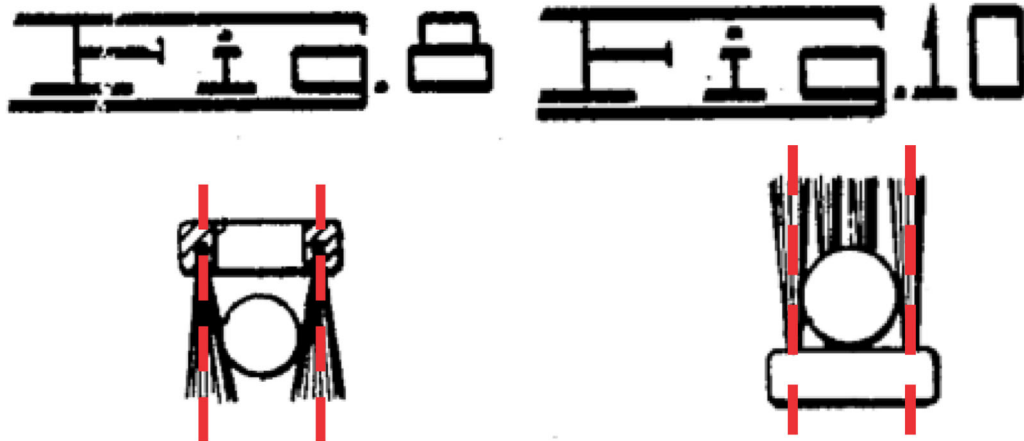


Id.

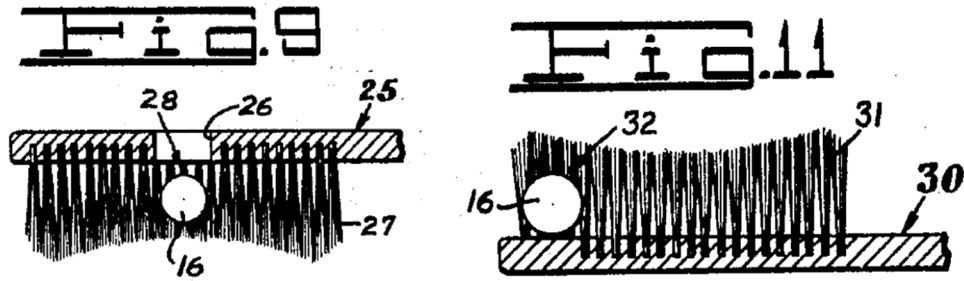
[1.3] “a plurality of vertical bristles...”

[10.3] “a plurality of bristles...”

Young’s embodiments include a plurality of vertical bristles extending upward from the front surface that are arranged distal from a center of the front surface because, as shown in annotated FIGS. 8 and 10 below, the bristles tufts include straight/vertical bristles:



Young, as shown in FIGS. 9 and 11 below, also includes some bristle tufts that are distal from a center of the front surface of the brush head.

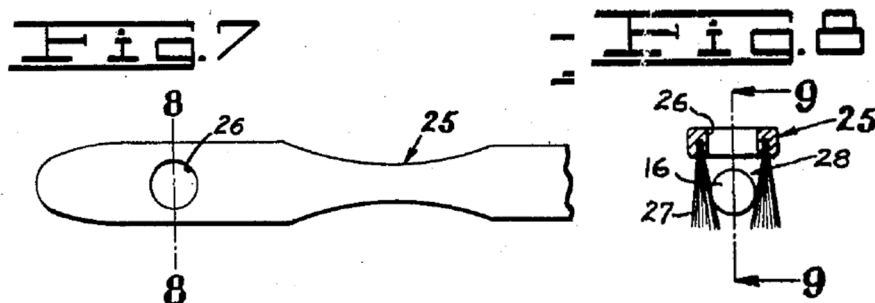


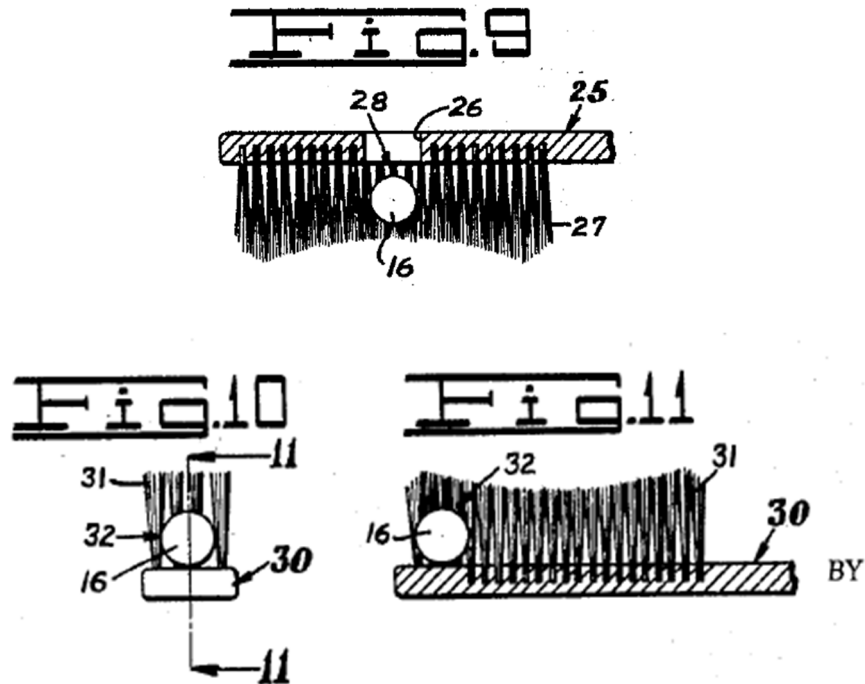
Ex. 1008, ¶¶ 26, 254-255.

[1.4]/[10.4] “a capsule receiving zone...”

Young’s embodiments include a capsule receiving zone sized to receive a capsule because “a portion of the bristles are arranged to form a pocket for the reception of a pellet of dentifrice.” Ex. 1012, 1:3-9.

In one embodiment of Young (FIGS. 7-9 below) bristles 27 surround a hole 26 to form a pocket 28, and the pellet 16 is “engaged and retained by the bristles (Ex. 1012, 2:21-29), and in another embodiment (FIGS. 10 and 11 below), surrounding bristles 31 form “a pocket 32 in which the pellet 16 will be retained in place by the resiliency of the bristles” (Ex. 1012, 2:30-34).



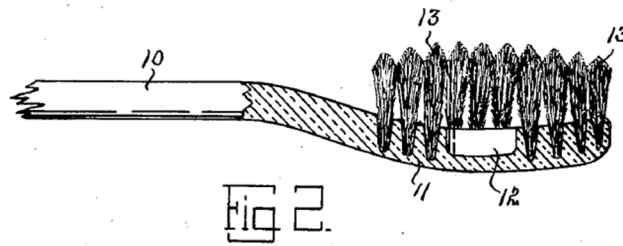
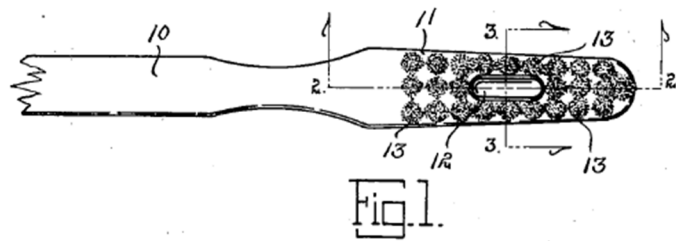


Ex. 1008, ¶¶ 256-257.

Young's pellet is an oral care capsule because it "comprises a central or core portion 17 which may be a powder or which may be plastic in the nature of a cream and a covering 18 which may be made of such material as starch, or any material having the desired inert or other properties and which is soluble in water." Ex. 1012, 1:50-2:4; Ex. 1008, ¶¶ 258-259.

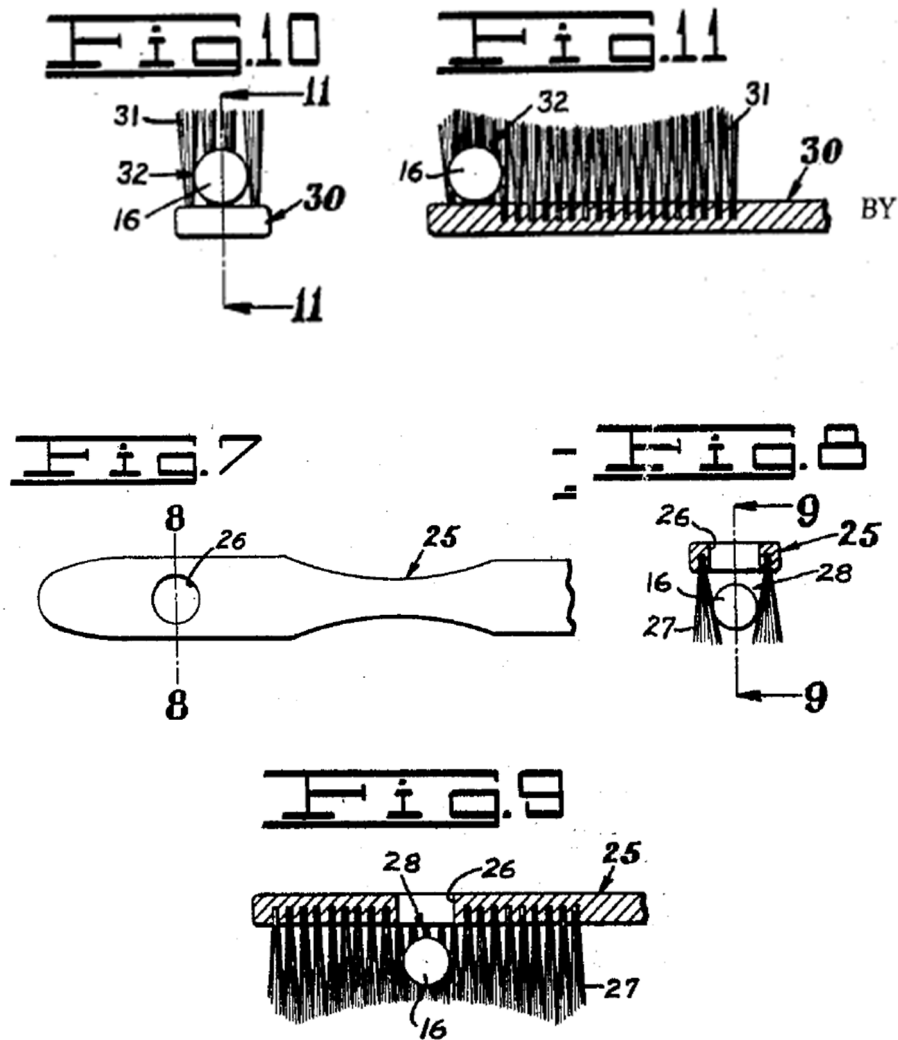
[1.5]/[10.5] **"including a recess defined in the front surface..."**

As described above, Young includes a capsule receiving zone. Davidson similarly discloses a "centrally located receiving area" for receiving dentifrice, comprising "well 12" formed in a front surface of the head with bristles "surrounding the centrally located well." Ex. 1010, 1:1-10, 1:51-55.



Id., FIGS. 1-2.

As described *supra* Section X(A), a POSITA would have been motivated to modify Young by incorporating the Davidson's well to further hold the pellet "by suction." Ex. 1010, 3:20-24. As explained, a POSITA would have been motivated to modify, as taught by Davidson, the embodiment in Young of FIGS. 10 and 11, below, in which the pellet is front-loaded onto the front surface of the head, by moving the pocket 32 to a center of the head and to include a well in the center of the head, or, alternatively, to modify the other embodiment of Young of FIGS. 7-9 by replacing the hole 26 with a well. Ex. 1008, ¶¶ 260-262.

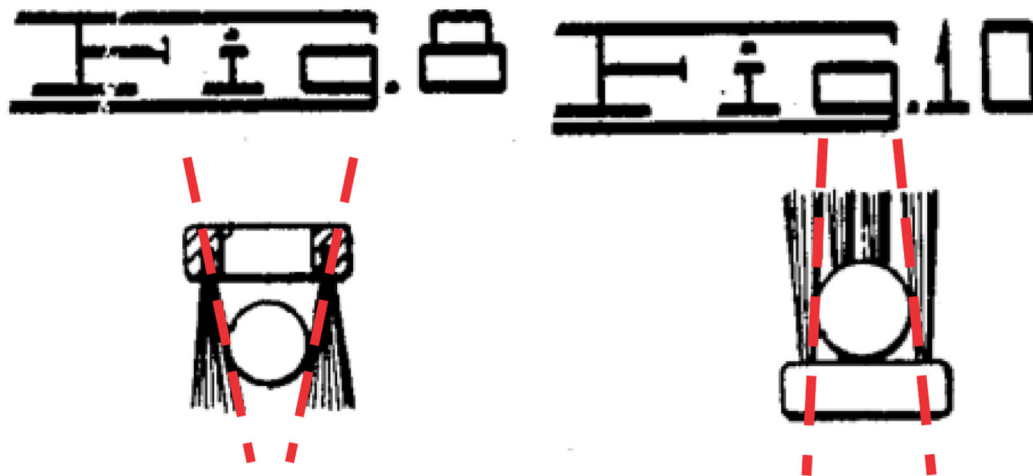


The Young-Davidson combination discloses these elements, because Young as modified to include a well as disclosed in Davidson would provide a recess defined in the front surface of the brush head that is arranged to receive at least a portion of an oral care capsule inserted past the vertical bristles. *Id.*, ¶ 264.

Although the shapes of the receiving areas in Davidson and Young differ, the shape is an obvious design choice based on the type of dentifrice to be held. *Id.*, ¶ 265.

[1.6]/[10.6] “at least [one pair of/three] angled capsule retaining elements...”

In Young’s embodiments, the bristles of the brush head include angled capsule retaining elements (angled bristles) elevated above a capsule receiving zone (a dentifrice “pocket”) and an oral care capsule is “engaged and retained” by the angled bristles. Ex. 1010, 1:6-9, 2:21-29.

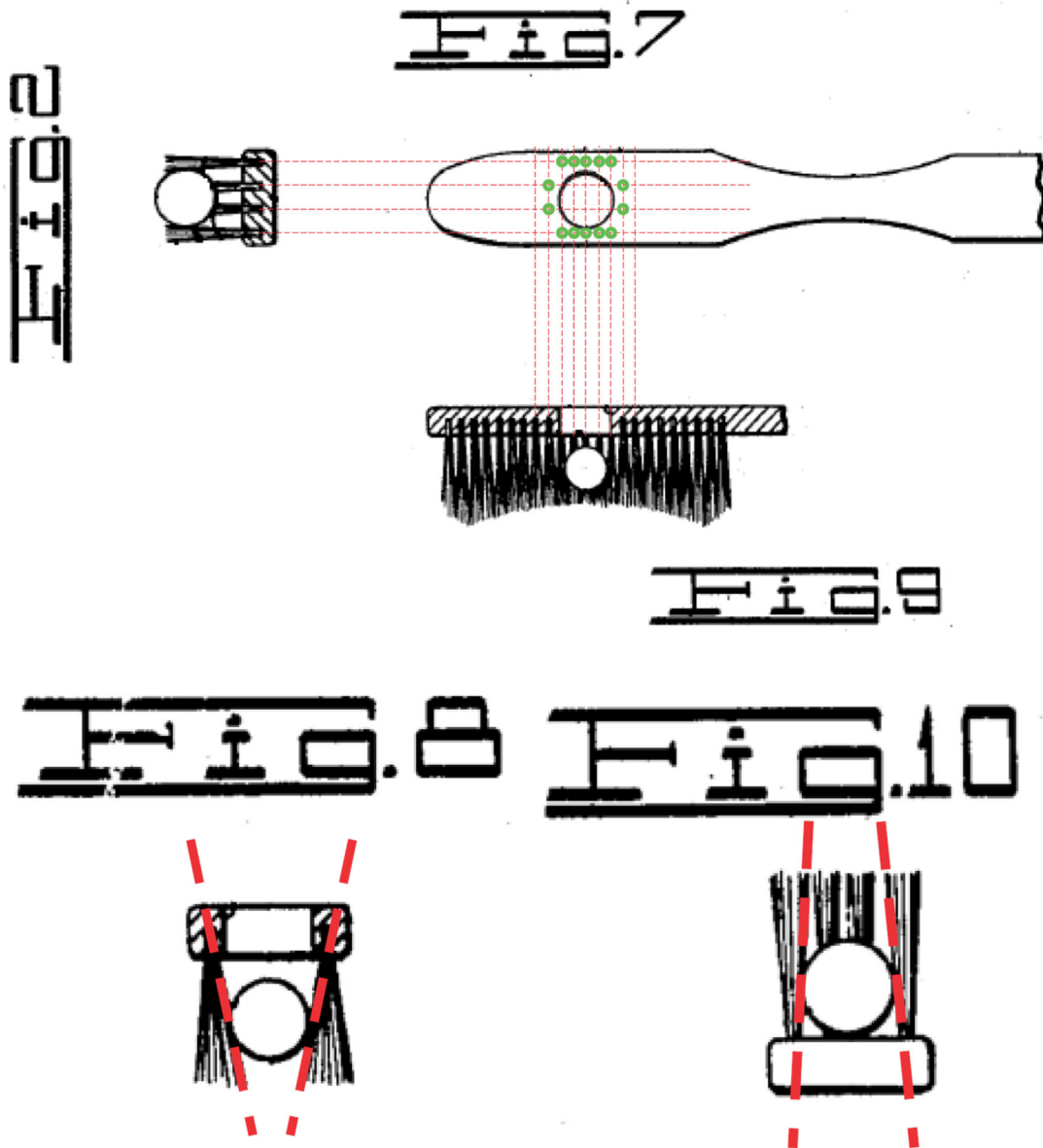


Ex. 1008, ¶¶ 26, 266 (annotated FIGS. 8, 10).

Young’s bristle tufts include not only straight/vertical bristles, but also angled bristles adjacent the pellet that are canted away from vertical toward the pocket and contact and retain the pellet within the pocket. *Id.*, ¶ 267.

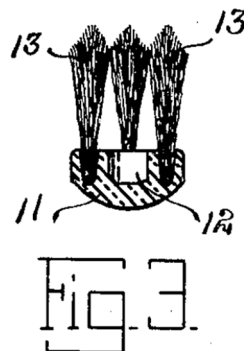
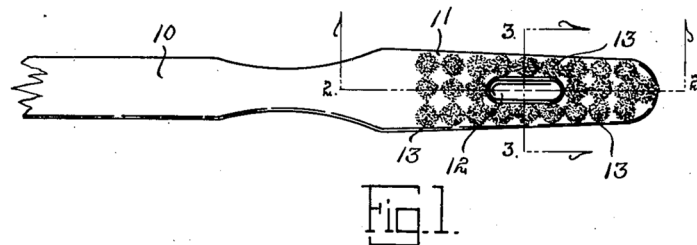
Further, Young has both at least one pair of angled bristles and at least three angled bristles. As shown in the annotated Figures of Young, below, many tufts of bristles (more than three) surround the receiving zone in a circular arrangement, and,

as shown in FIGS. 8 and 10, each tuft has at least one angled bristle canted towards the receiving zone. *Id.*, ¶¶ 268-269.



Therefore, the brush of Young has both at least one pair of angled bristles and at least three angled bristles, as recited in Claims 1 and 10.

The Young-Davidson combination still includes these features. Including a recess/well in the front surface of the brush head, as taught by Davidson, would still provide that Young's bristles are elevated above the recess and still serve to retain the pellet. As shown in FIG. 1 and 3 of Davidson, below, its bristles are similarly arranged around the well/recess, and thus Young is readily modifiable to include a similar well with surrounding angled bristles.



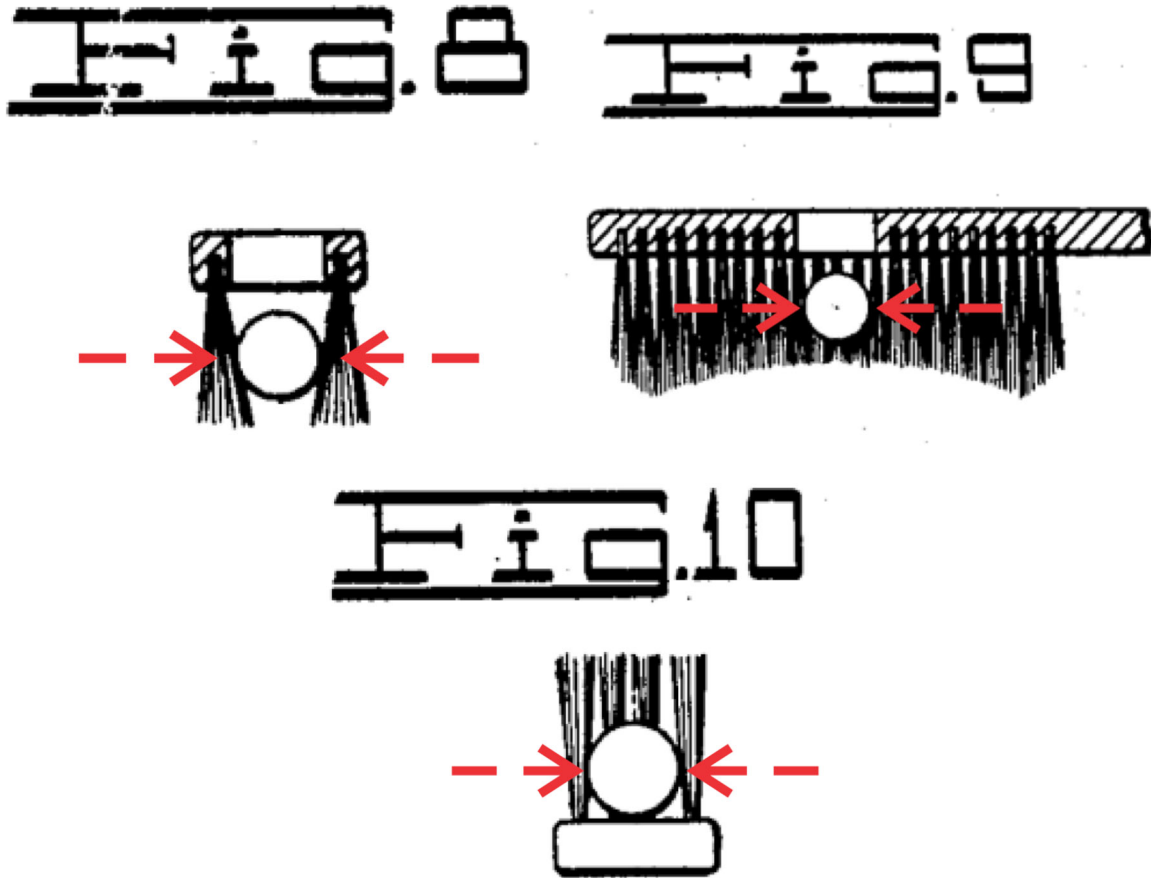
Ex. 1008, ¶¶ 269-271.

[1.7] “...along diametrically opposing sides...”

[10.7] “...at least 108 degrees apart...”

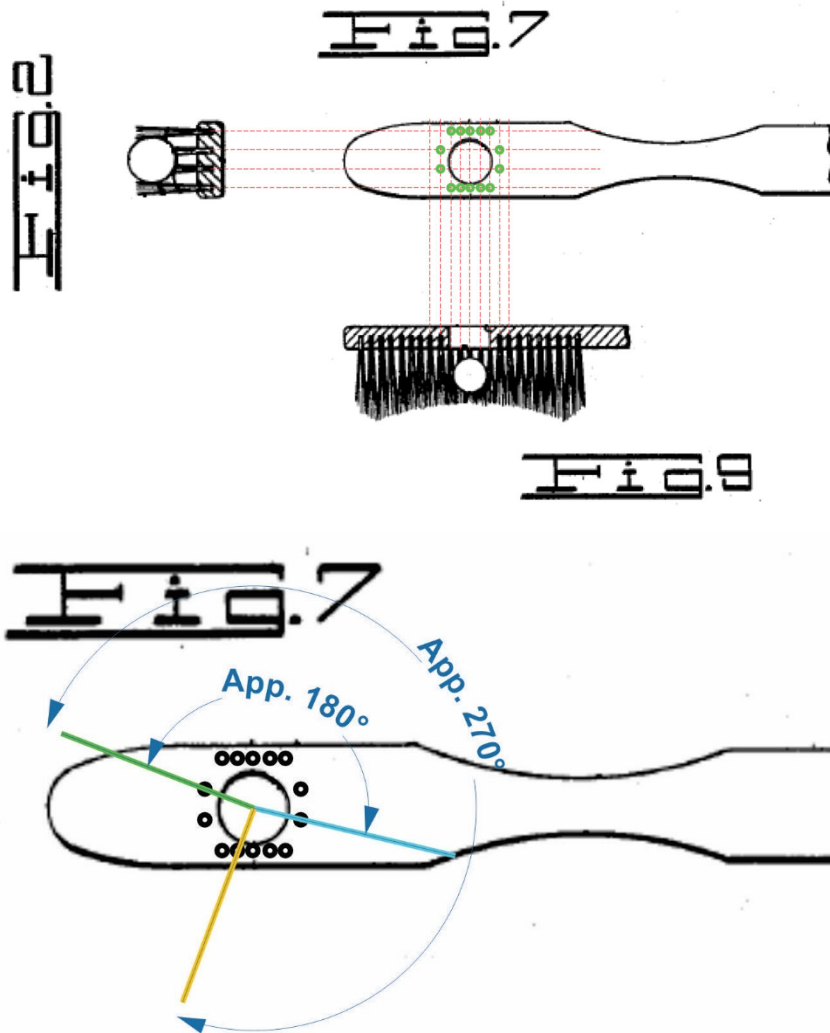
As explained above, Young's bristles are arranged around a circular dentifrice receiving zone. As such, Young includes at least one pair of diametrically opposed

angled bristles. See also annotated FIGS. 8-10, showing a pair of diametrically opposed angled bristles:



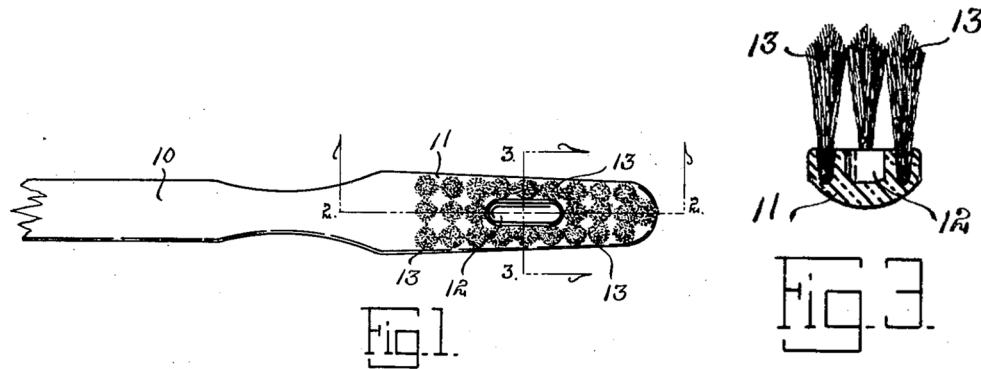
Ex. 1008, ¶¶ 26, 272-274.

Additionally, since the angled bristles are arranged around a circular pocket, each angled bristle is also 108° apart from at least one other angled bristle. Although Young does not provide a top view of the brush head, Young clearly includes these features, as shown below in annotated versions of FIG. 7:



The annotated figures show a first angled bristle in a first tuft (green) is more than 108° apart from another angled bristle in another tuft (blue), a second angled bristle in a second tuft (yellow) is more than 108° apart from another angled bristle in another tuft (green), and a third angled bristle in a third tuft (blue) is more than 108° apart from another angled bristle in another tuft (green). *Id.*, ¶¶ 26, 275-276.

Davidson provides a similar structure including bristle tufts surrounding the elliptical well 12, as shown below.



The Young-Davidson combination thus meets these element of Claims 1 and 10. *Id.*, ¶ 277-278.

To the extent Patent Owner asserts the prior art does not explicitly disclose the claimed degrees, the specific claimed degrees would be obvious given the prior art's circular arrangement of bristles. *Id.*, ¶ 278. The '332 Patent similarly provides no explicit disclosure for the recited degrees.

[1.8]/[10.8] “...arranged to contact the oral care capsule.”

Young's angled bristles contact the pellet. See annotated FIGS. 8 and 10:



This is also clear from Young's specification, which describes the pellet is "engaged and retained by the bristles." Ex. 1012, 2:26-29, 2:31-34. Ex. 1008, ¶¶ 26, 279-281.

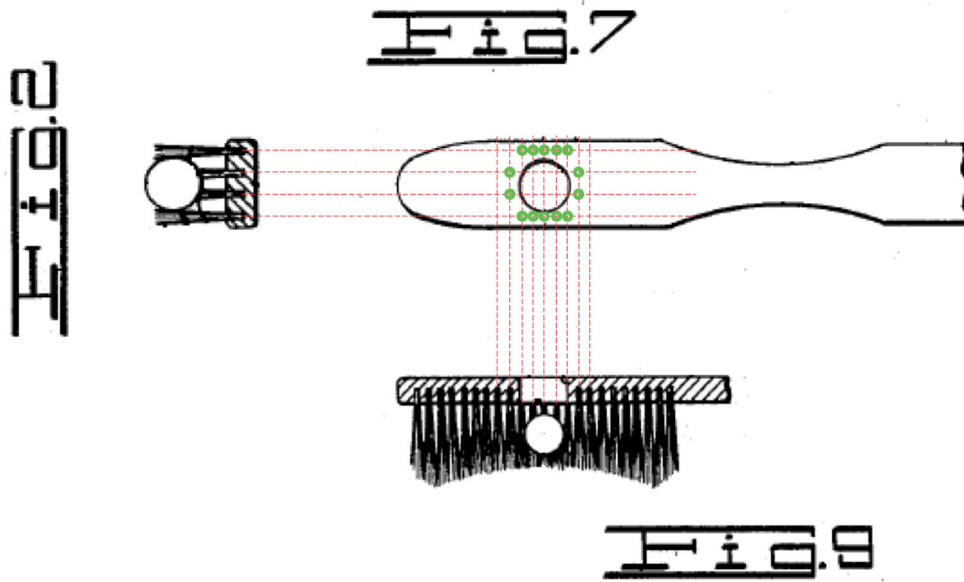
2. Claims 2 and 15

Young includes multiple pairs of angled bristles as recited in claim 2, or angled capsule retaining elements as recited in claim 15. See annotated FIGS. 8 and 10, showing a pair of angled bristles:



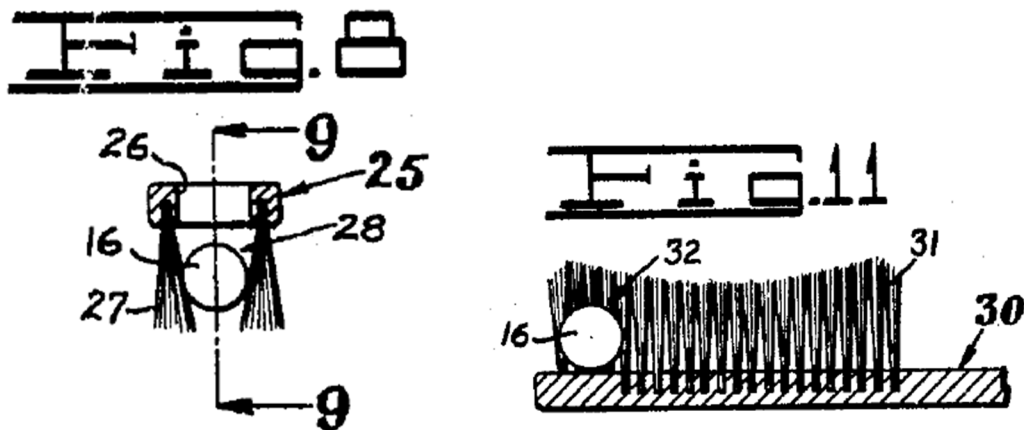
Ex. 1008, ¶¶ 26, 284.

As the dentifrice pocket is formed by, and embedded within, the surrounding bristles (see the annotated figures below), there are multiple pairs arranged around the pocket.



Id., ¶¶ 26, 285.

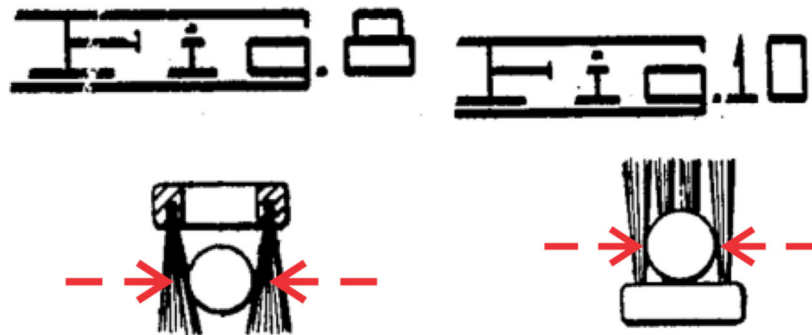
Further, Young discloses or suggests its brush head includes a flexural portion, as recited in claim 2, to permit the bristles to spread apart when loading a capsule, because, as shown for example in FIGS. 8 and 11, below, the bristles are embedded in the brush head such that a POSITA would understand them to be flexible and spreadable:



Young thus renders obvious a flexural portion to permit spreading of the bristles. *Id.*, ¶¶ 286-288.

3. Claim 5

As described above, as shown in FIGS. 8 and 10 of Young, Young's bristles include within bristle tufts not only straight/vertical bristles, but also angled bristles adjacent the pellet canted away from vertical toward the dentifrice pocket and that contact and retain the pellet within the pocket/recess. Ex. 1012, 2:26-29, 2:31-34.



Ex. 1008, ¶¶ 26, 290-292.

4. Claims 6 and 12

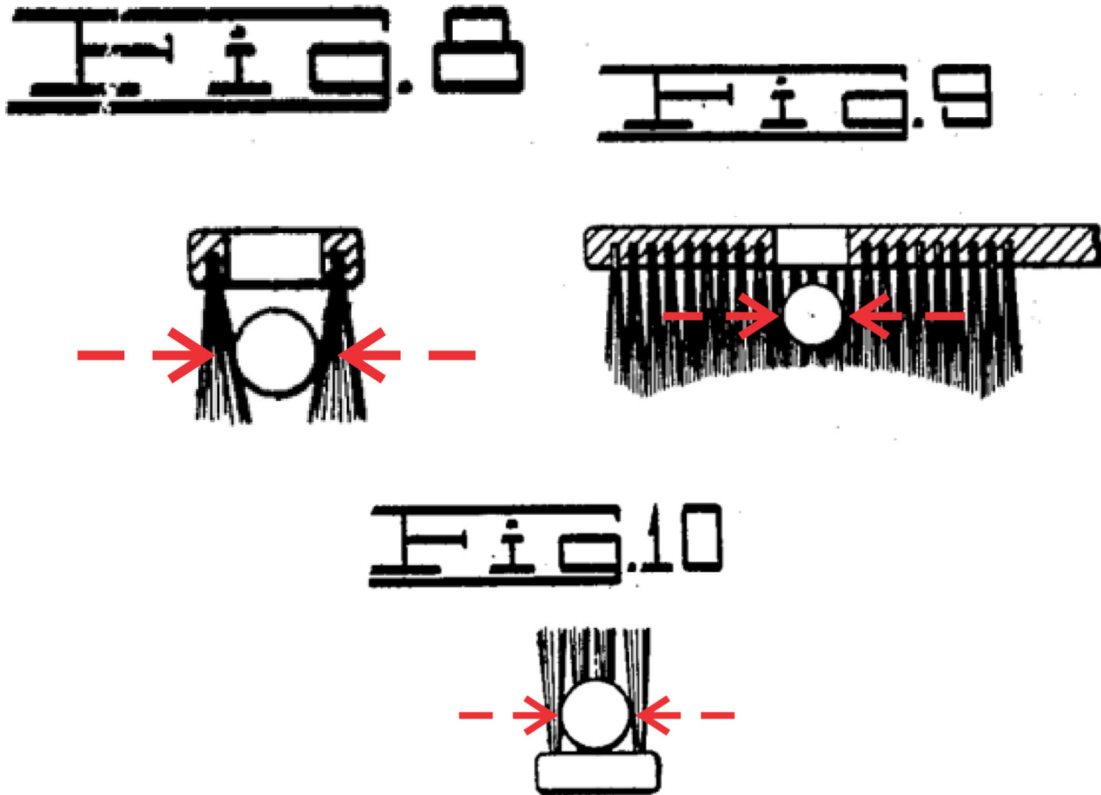
Claims 6 and 12 merely narrow “capsule retaining elements” to “angled bristles.” As described above regarding claims 1 and 10, Young has angled bristles.



Ex. 1008, ¶¶ 26, 295-296.

5. Claims 7 and 11

See annotated FIGS. 8-10 of Young:



As shown above, Young's toothbrush includes bristles arranged distal from the dentifrice pocket in the center of the brush head, and there are angled bristles between the pocket and other vertical bristles within other tufts. Therefore, Young includes angled bristles that are between the plurality of vertical bristles and a center of a capsule receiving zone. *Id.*, ¶¶ 26, 298-300.

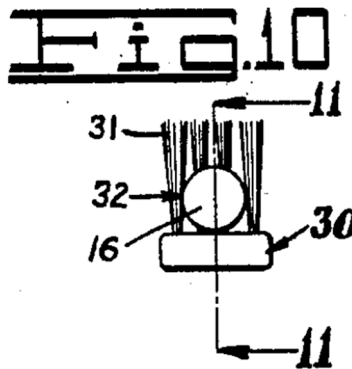
6. Claims 8 and 13

Young discloses an oral care capsule that is a dentifrice composition. The dentifrice pellet in Young is a “pellet of dentifrice” that “comprises a central or core portion 17 which may be a powder or which may be plastic in the nature of a cream and a covering 18.” Ex. 1012, 1:6-9, 1:50-2:4; Ex. 1008, ¶¶ 303-304.

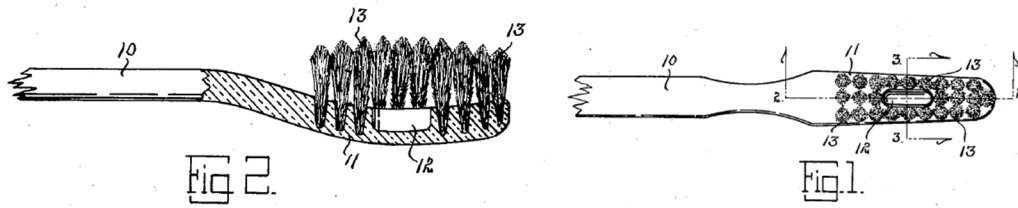
7. Claims 9 and 14

The Young-Davidson combination provides a front-loading method as claimed. Young includes embodiments where a pellet is front-loaded into the receiving zone and “retained by” angled bristles. Ex. 1012, 2:21-29; Ex. 1008, ¶ 307.

See FIG. 10:



By modifying Young to include a well as taught in Davidson (see below), the method would also include loading the pellet into the well/recess.



Davidson discloses dentifrice is front-loaded past bristles into the well, stating “the bristles provide sides and ends to this receiving area in the bristles” and the dentifrice “may fall downwardly and be received and held by the well.” Ex. 1010, 2:11-27. Ex. 1008, ¶¶ 308-310.

8. Claims 16 and 17

At least a portion of Young’s angled bristles overlap a portion of the pocket/recess.



Annotated FIGS. 8, 10.

This remains the case for the Young-Davidson combination, as the pellet would reside in the well with the angled bristles extending over the well. Ex. 1008, ¶¶ 26, 313-315.

9. Claim 18

As described above regarding claim 10, Young's angled bristles include at least three angled bristles that are arranged proximate to a perimeter of the capsule receiving zone, and each are at a position not only at least 108° apart from at least one other angled bristle, but also at least 144° apart, as recited in claim 18. See the annotated figures below:

Fig. 2

Fig. 7

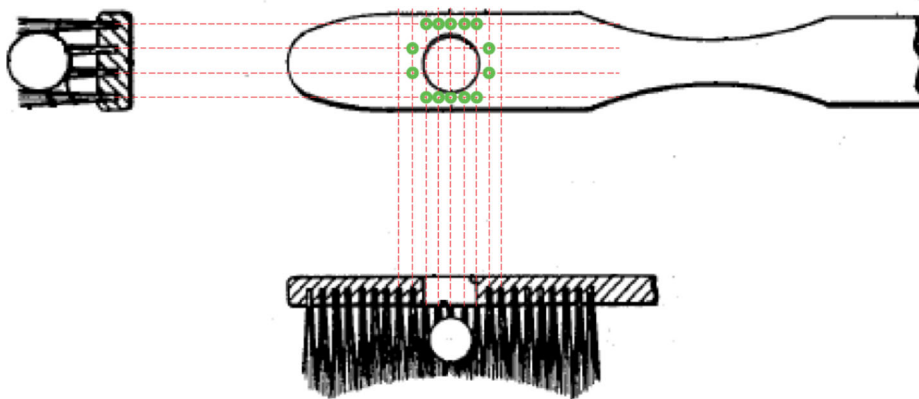
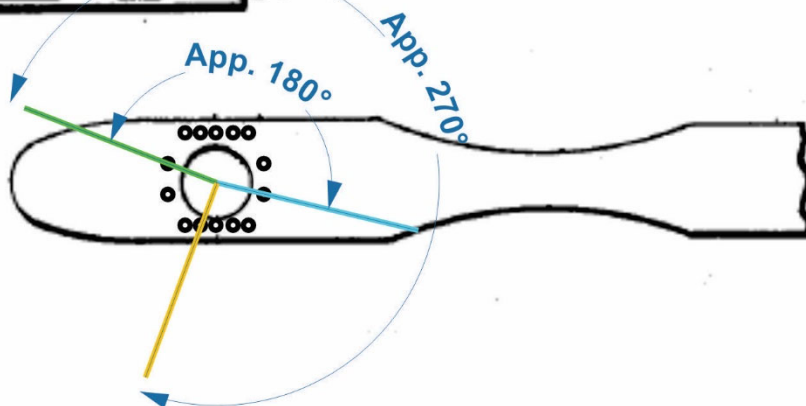


Fig. 9

Fig. 7



Id., ¶¶ 26, 317-321.

XI. GROUND 4: CLAIMS 1, 2, AND 5-18 ARE OBVIOUS OVER YOUNG, DAVIDSON, AND FITZ-GIBBON

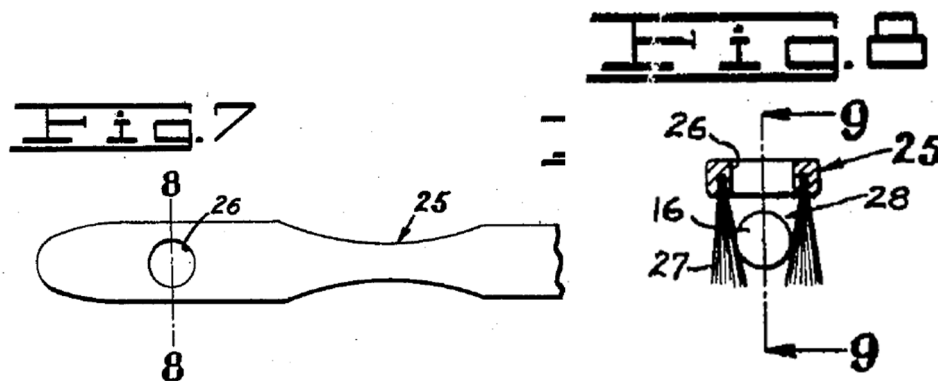
A. Motivations to Combine

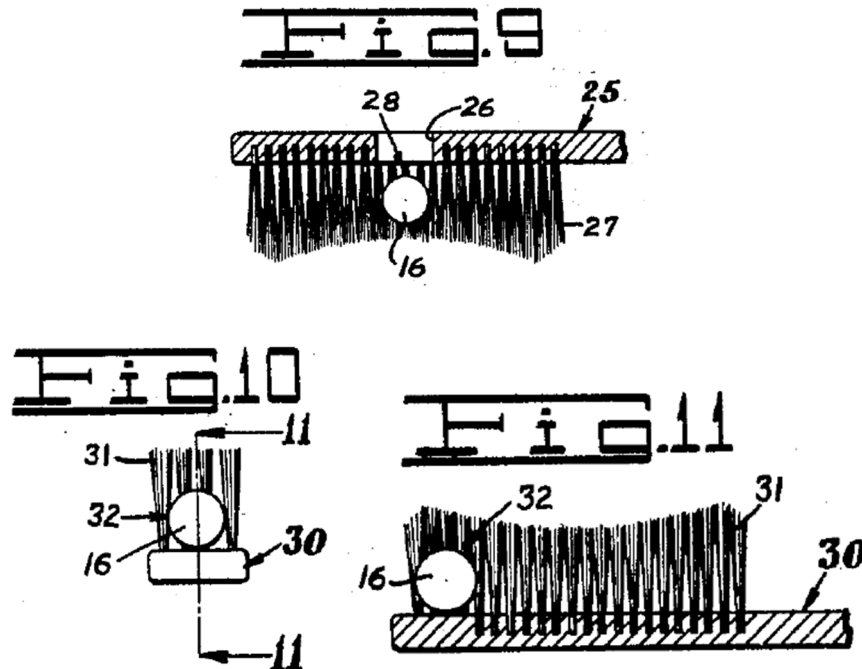
Fitz-Gibbon, like Young and Davidson, is concerned with retaining dry/solid dentifrice. As described in Section VII(C), Fitz-Gibbon's toothbrush has angled bristles over an opening to create a "dentifrice holding chamber or pocket" for "dry dentifrice":



Ex. 1011, 1:79-87, FIGS. 3, 5.

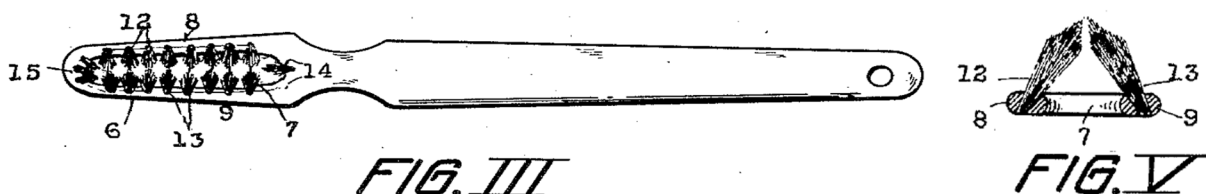
As described *supra* Section X(A), Young is concerned with effectively retaining the pellet within the pocket/recess:





Ex. 1012, 3-9; Ex. 1008, ¶¶ 322-325.

In addition to including a well as taught in Davidson to provide suction on the pellet (Ex. 1010, 3:20-24), a POSITA would have been motivated to tilt the tufts of bristles to further enhance the pellet retaining strength of the toothbrush, such as if the user turns the toothbrush bristle-side down prior to brushing. This would require simply tilting the bristle tufts of the Young-Davidson combination towards a center of the dentifrice pocket, taught by Fitz-Gibbon:



Ex. 1008, ¶ 327.

Young includes embodiments in which a pellet is front-loaded by inserting the pellet into a pocket of bristles. Ex. 1012, 1:45-50, 2:30-34, FIGS. 1, 2, 7-9. Given Fitz-Gibbon discloses the bristles are “slightly spaced from each other” (Ex. 1011, 1:58-67), the angled bristles would still allow a user to spread the bristles to front-load the capsule. *Id.*, ¶ 328.

Young, Davidson, and Fitz-Gibbon provided a POSITA with predictable options for retaining dentifrice by a toothbrush. A POSITA would have been strongly motivated to modify Young based on Davidson and Fitz-Gibbon to maximize the toothbrush’s ability to retain Young’s pellet. Such would require only ordinary skill and produce predictable results. *Id.*, ¶ 330.

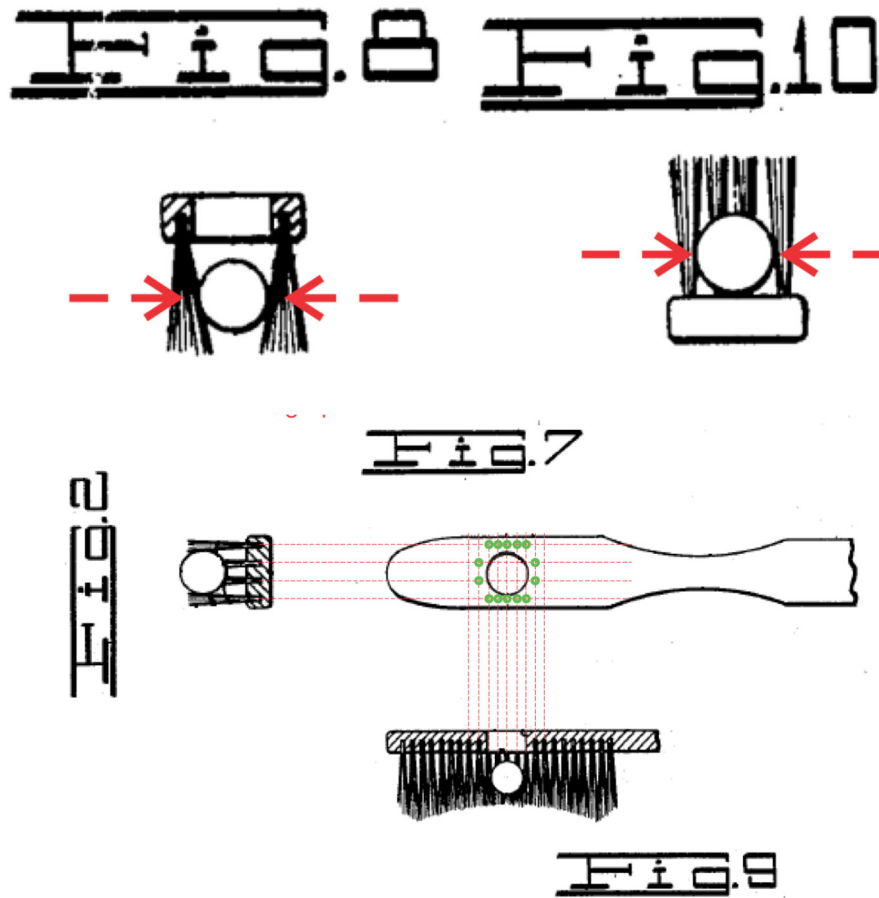
B. Young, Davidson, and Fitz-Gibbon meet all claim elements.

1. Claims 1 and 10

Elements [1.0]-[1.5] and [10.0]-[10.5] are met for the same reasons as Ground 3. Ex. 1008, ¶ 331.

[1.6]/[10.6] **“at least [one pair of/three] angled capsule retaining elements...”**

As described in Ground 3, Young discloses an arrangement of bristles around a circular dentifrice pocket, including pairs of bristles and at least three bristles:



Ex. 1008, ¶¶ 26, 332.

Fitz-Gibbons discloses a brush with tilted bristles 12, 13 on opposing sides of a receiving zone:



The Young-Davidson-Fitz-Gibbon combination discloses these elements because Young, as modified, includes bristles angled towards the center of the receiving zone, as taught by Fitz-Gibbon. Young, as modified, would retain this

arrangement of bristles, and thus the combination includes at least a pair of angled capsule retaining elements elevated above a recess and configured to retain an oral care capsule in a capsule receiving zone, and at least three angled retaining elements canted away from vertical in a direction toward a center of the capsule receiving zone. Ex. 1008, ¶¶ 333-335.

[1.7] “...along diametrically opposing sides...”

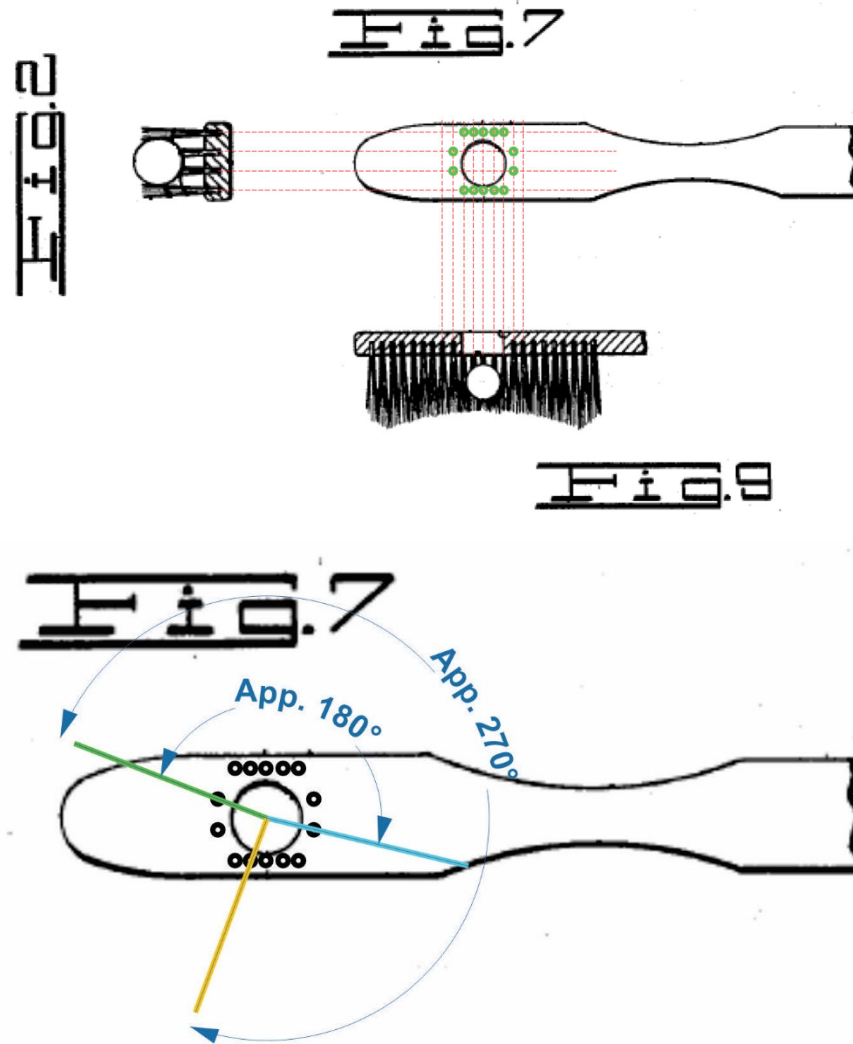
[10.7] “...at least 108 degrees apart...”

As described above and in Ground 3, angled bristles of the Young-Davidson-Fitz-Gibbon combination include a pair of angled bristles in which first and second angled bristles are on diametrically opposing sides of the capsule in the receiving zone.



Annotated FIGS. 8 and 10 of Young.

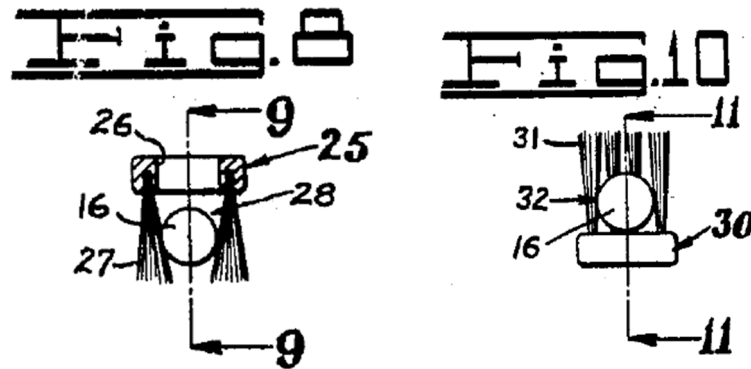
Further, the Young-Davidson-Fitz-Gibbon combination retains the arrangement of bristles in Young, and thus includes at least three angled bristles that are at least 108° apart:



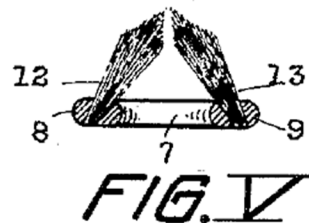
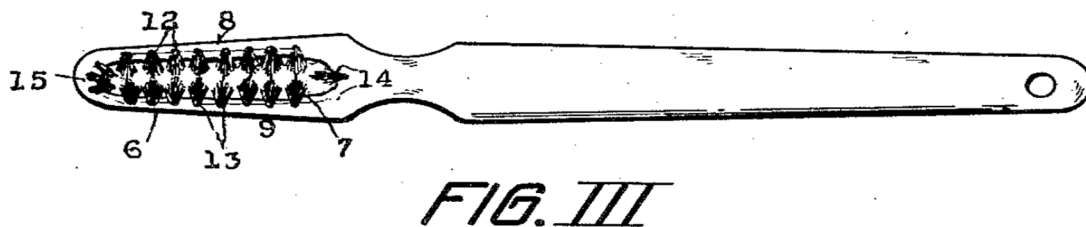
Ex. 1008, ¶¶ 26, 336-339 (annotated Figures of Young).

[1.8]/[10.8] “...arranged to contact the oral care capsule.”

As explained in Ground 3, Young discloses that the pellet is “engaged and retained by the bristles.” Ex. 1012, 2:26-29, 2:31-34. It is clear from this disclosure, and FIGS. 8 and 10 shown below, that the bristles of Young contact the pellet:



Tilting the bristles as taught by Fitz-Gibbon would still allow for front-loading of the pellet. As shown in FIG. 3 and 5 of Fitz-Gibbon below, the opposing angled tufts include a space in-between:



This would allow a user to spread the bristles to load a capsule. *Id.*, ¶¶ 340-341. The tilted/angled bristles of the combination would thus contact the pellet residing in Davidson’s well. *Id.*, ¶¶ 342-343.

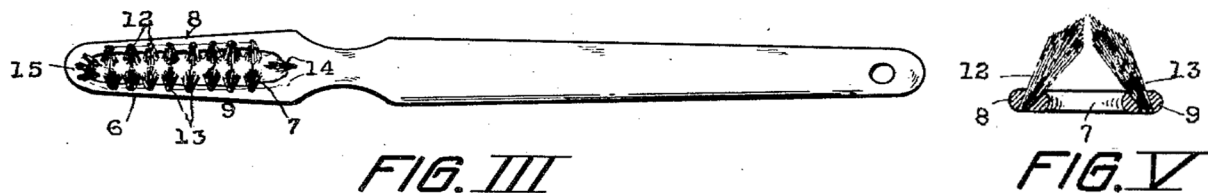
2. Claims 2, 6, and 12

Claims 2, 6, and 12 narrow “capsule retaining elements” to “angled bristles.” As described above, the Young-Davidson-Fitz-Gibbon combination has angled

bristles. For the same reasons as Ground 3, the other elements of Claims 2, 6, and 12 are also met. *Id.*, ¶ 345.

3. Claim 5

As described above, Fitz-Gibbons discloses angled bristles on opposing sides of a receiving zone:

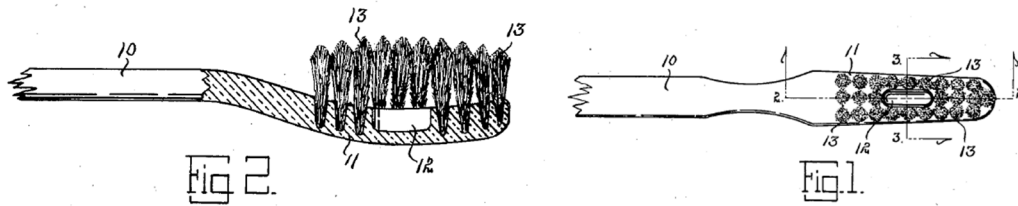


As modified using the teachings of Fitz-Gibbons to tilt the bristles towards a center of a receiving zone, the bristles of Young would thus include angled retaining elements canted away from vertical in a direction toward a center of the capsule receiving zone. *Id.*, ¶ 347-349.

4. Claims 9 and 14

As described above, the Young-Davidson-Fitz-Gibbon combination provides a front-loading method as claimed. Young includes embodiments where a pellet is front-loaded into the dentifrice pocket. Ex. 1012, 1:45-50, 2:30-34, FIGS. 1, 2, 7-9. Tilting the bristles as taught by Fitz-Gibbon would still allow this front-loading of the pellet, such as by spreading the bristles. Ex. 1008, ¶ 352.

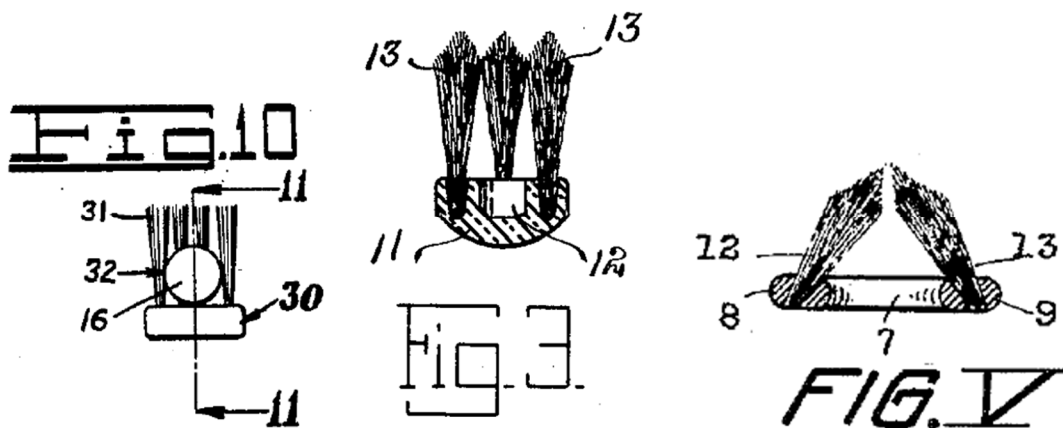
By modifying Young to include a well as taught in Davidson (see below), the method would also include loading the pellet into the well/recess.



Davidson discloses dentifrice is front-loaded past bristles into the well, stating “the bristles provide sides and ends to this receiving area in the bristles” and the dentifrice “may fall downwardly and be received and held by the well.” Ex. 1010, 2:11-27. Ex. 1008, ¶¶ 353-355.

5. Claims 16 and 17

In the Young-Davidson-Fitz-Gibbon combination, the angled bristles overlap the recess/well towards a center of the recess/well. All three references show bristles overlapping a receiving zone/recess:



Ex. 1008, ¶¶ 358-360.

6. Claims 7, 8, 11, 13, 15, and 18

Dependent claims 7, 8, 11, 13, 15, and 18 are met for the same reasons as Ground 3. Ex. 1008, ¶ 334.

XII. GROUND 5: CLAIMS 1, 5, 7-11, AND 13-18 ARE OBVIOUS OVER SORRENTINO IF MEANS-PLUS-FUNCTION INTERPRETATION IS NOT ADOPTED

A. Sorrentino is Available as Prior Art Due to Lack of Priority

As described in Section VI, the '332 Patent cannot claim the benefit of the filing date of the '627 Application. Sorrentino, filed January 24, 2008, is thus available as prior art under 35 U.S.C. § 102(e).

B. Sorrentino meets all claim elements.

In the Notice of Allowance for the '332 Patent, the examiner indicated that Sorrentino “disclose[s] the claimed invention” but for the claimed priority date. Ex. 1002, 36-37.

1. Claims 1 and 10

[1.0]/[10.0] **“A toothbrush comprising a brush head...”**

As shown in FIG. 20, below, Sorrentino discloses a toothbrush with “a head mounted to one end of the handle containing a plurality of oral care elements.” Ex. 1013, Abstract, 11:45-50.

FIG. 20



Ex. 1008, ¶¶ 366-367.

[1.1]/[10.1] “a front surface”

The brush head of Sorrentino includes a front surface from which the bristles 26 extend:

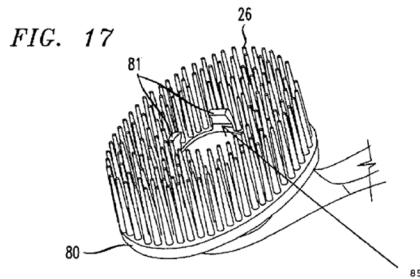


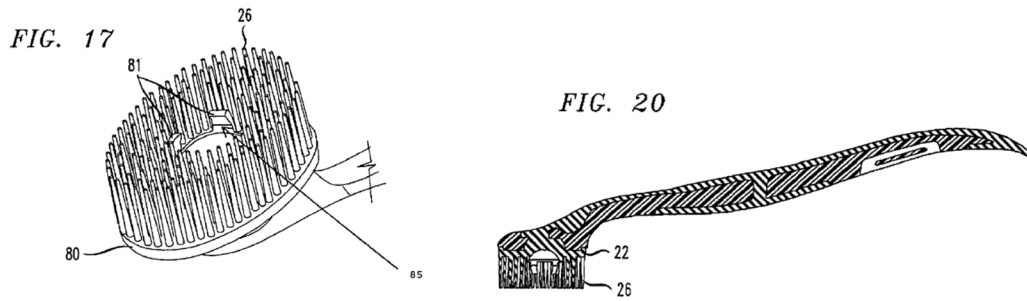
FIG. 20



Id.

[1.2]/[10.2] “a back surface...”

The brush head of Sorrentino includes a back surface that opposes the front surface:

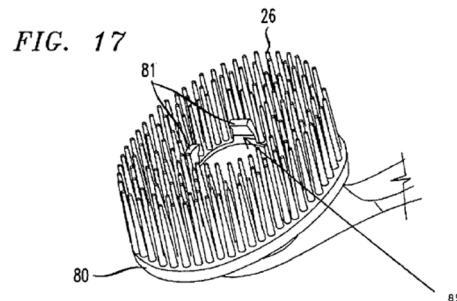


Id.

[1.3] “a plurality of vertical bristles...”

[10.3] “a plurality of bristles...”

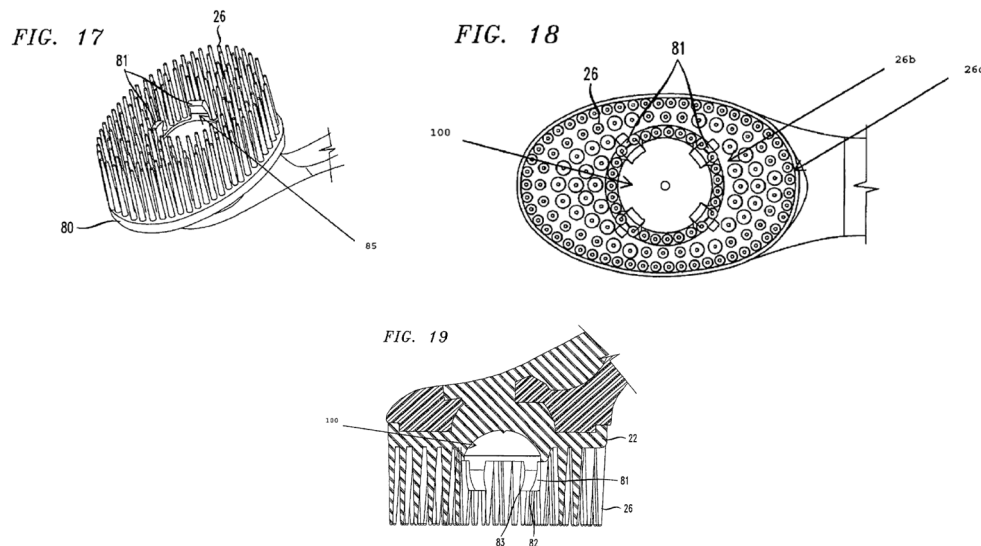
Sorrentino discloses a toothbrush with “a head mounted to one end of the handle containing a plurality of oral care elements,” including “bristles 26.” *Id.*, Abstract, 11:45-50:



Id., FIG. 17. As shown in FIG. 17, the bristles 26 are distal (spaced away) from the center of the front surface. Ex. 1008, ¶¶ 368-369.

[1.4]/[10.4] **“a capsule receiving zone...”**

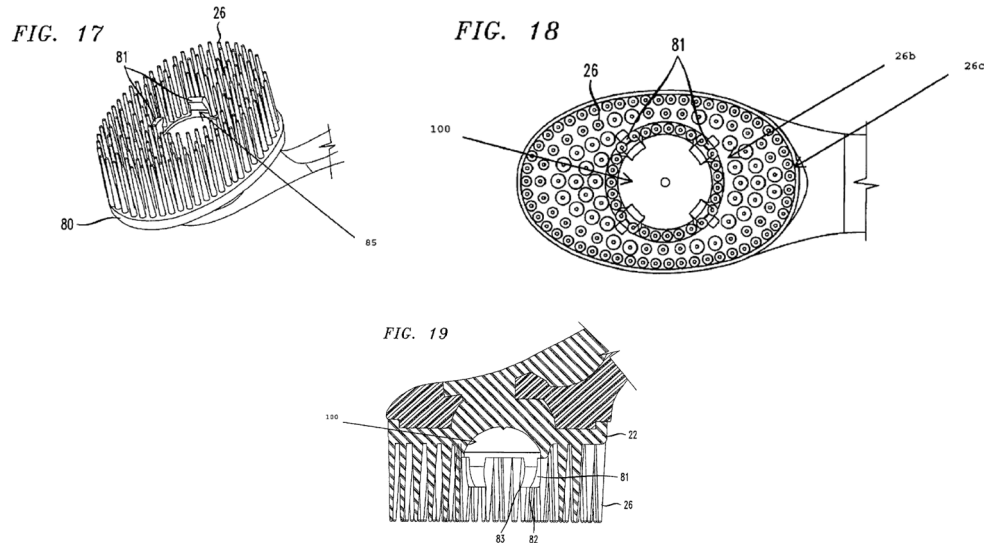
Sorrentino discloses a capsule receiving zone sized to receive an oral care capsule. Sorrentino explains, “with reference to FIGS. 17-20, in one construction, a basin, or cavity 100 is provided in carrier 80 below the dispenser 32.” Ex. 1013, 12:38-40. Note that Sorrentino’s “dispenser 32” is an “oral care dispenser, such as a bead of packed dentifrice or capsule.” *Id.*, 11:38-40.



As shown in FIGS. 17-19 above, the “basin 100 can be a concaved structure or hemispherical structure disposed in the interior area, beneath and between the retaining members 81,” and the “basin 100 serves to retain a portion of the oral care material from the dispenser 32 to extend the beneficial cleaning effects of the oral care material during brushing.” *Id.*, 12:38-48. Ex. 1008, ¶¶ 370-371.

[1.5]/[10.5] **“including a recess defined in the front surface...”**

The cavity 100 of Sorrentino is a recess defined within the front surface and is arranged to receive an oral care capsule:



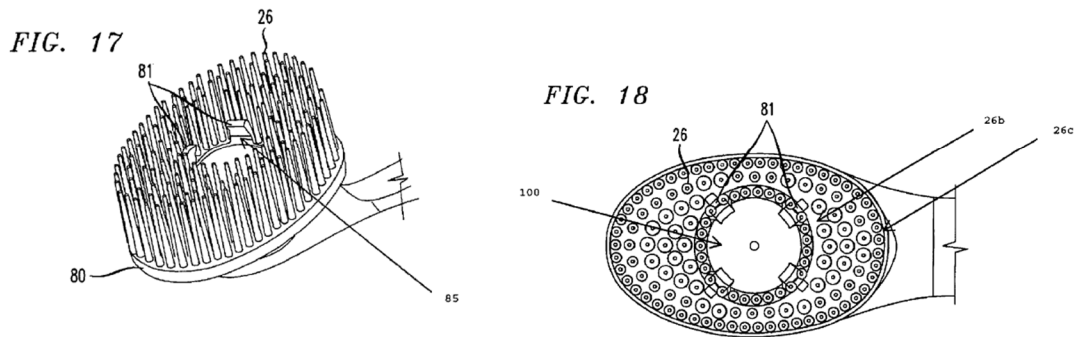
Id. FIGS. 17-19.

The cavity 100 is a “concaved structure or hemispherical structure disposed in the interior area, beneath and between the retaining members 81,” and that can “retain a portion of the oral care material. *Id.*, 12:40-48.

Sorrentino further describes that the oral care material can be a “dispenser,” “bead,” or “capsule 32” that is retained “beneath the distal ends of the bristles 26” and “submerged within the field of bristles 26.” *Id.*, 11:40-50. Ex. 1008, ¶¶ 372-374.

[1.6]/[10.6] “at least [one pair of/three] angled capsule retaining elements...”

Sorrentino's brush head includes "curved retaining members 81," "such as prongs or biasing members, to hold an oral care dispenser." Ex. 1013, 11:36-37, 12:51-65:



Id., FIGS. 17-18.

As shown in the figures above, the retaining members are also elevated above the recess, and are configured to retain an oral care capsule. Sorrentino describes using "curved" retaining members because "[t]he combination of retaining members 81 provides a compressive force to hold the dispenser 32 in place" while "[t]he inwardly disposed engaging surface 85 is generally smooth" to "reliably resist prematurely rupturing the dispenser 32 before use," and "reduce thin wall stress on the surface of the dispenser" by providing "for a generally uniform distribution of pressure on the surface of the dispenser 32." *Id.*, 12:61-13:1.

Although Sorrentino's retaining members are "curved" rather than specifically "angled" or "canted away from vertical" as recited in the claims of the '332 Patent, it would have been obvious to a POSITA based on Sorrentino's

disclosure that angled retaining elements that are leaned/angled/canted against a capsule such as described in the '332 Patent (*see, e.g.*, FIG. 1) could also be used. Ex. 1008, ¶¶ 375-377.

Specifically, if “angled capsule retaining elements” is not subject to a means-plus-function interpretation, and encompasses broader scope, then Sorrentino’s capsule “retaining members” clearly render obvious the '332 Patent’s “capsule retaining elements” because Sorrentino’s curved retaining members are also “elevated above the recess and configured to retain an oral care capsule in the capsule receiving zone,” as recited in Claims 1 and 10. *Id.*, ¶ 378.

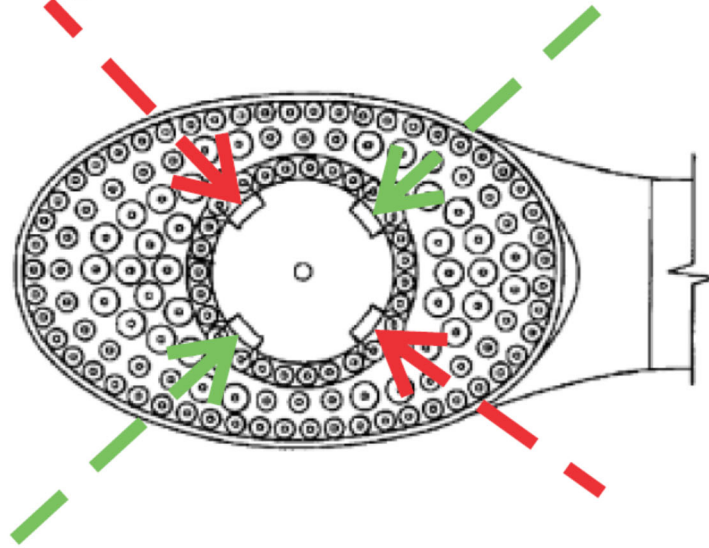
As further shown above, Sorrentino includes at least one pair of retaining members, and at least three retaining members. FIGS. 17 and 18 show four retaining members equally spaced around the cavity 100. Sorrentino further discloses other numbers of retaining members, such as “three retaining members 81 at triangular points around the perimeter, while other embodiments might use five, six, or more prongs around the perimeter.” Ex. 1013, 11:56-67; Ex. 1008, ¶¶ 379-380.

[1.7] “**...along diametrically opposing sides...**”

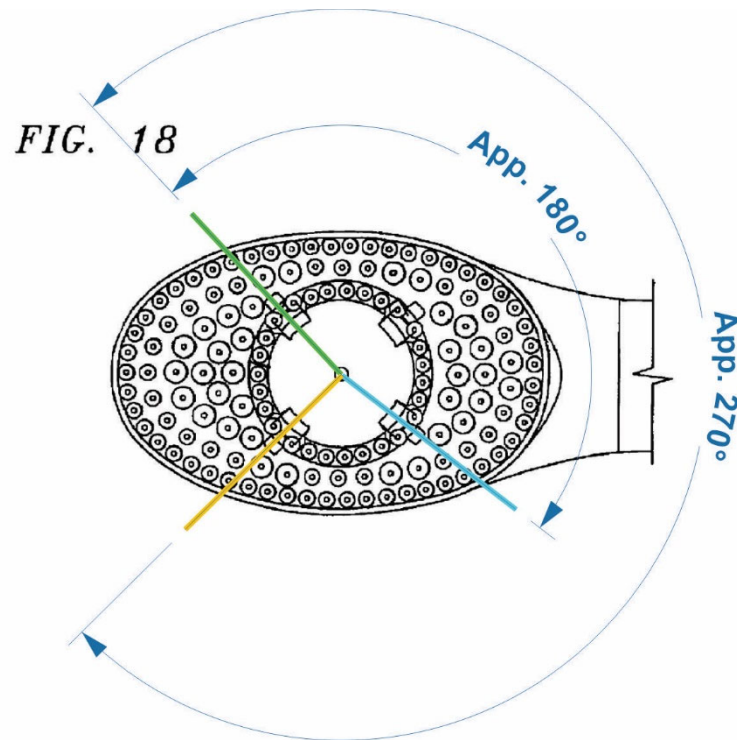
[10.7] “**...at least 108 degrees apart...**”

As shown in annotated FIG. 18 of Sorrentino, below, the brush head includes pairs of retaining elements that are on diametrically opposing sides of the cavity 100.

FIG. 18



Ex. 1008, ¶¶ 26, 381. As shown in annotated FIG. 18 of Sorrentino, below, the brush head also includes at least three retaining members that are proximate to the capsule receiving zone and that are each at least 108° apart from another one of the retaining members.



As shown above, a first retaining member (green) is over 108° apart from another retaining member (blue), a second retaining member (yellow) is over 108° apart from another retaining member (green), and a third retaining member (blue) is around over 108° apart from another retaining member (green). *Id.*, ¶¶ 26, 382-383.

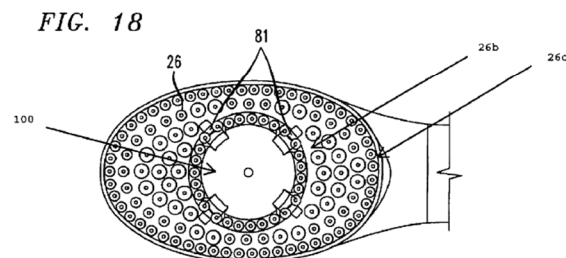
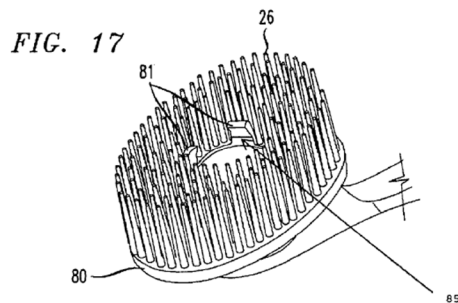
To the extent Patent Owner challenges the above based on that the prior art does not include an explicit disclosure of specific degrees, Petitioner submits that the specific degrees recited in claim 10 would be obvious given the arrangement of the retaining members in Sorrentino around cavity 100. *Id.*, ¶ 384. The '332 Patent similarly provides no explicit disclosure for the recited degrees.

[1.8]/[10.8] “...arranged to contact the oral care capsule.”

Sorrentino discloses that the retaining members contact the capsule, stating “retaining members 81 ... hold an oral care dispenser, such as a bead of packed dentifrice or capsule ... in place prior to use.” and “provides a compressive force to hold the dispenser 32 in place.” Ex. 1013, 11:35-40, 12:53-54, 12:61-63; Ex. 1008, ¶¶ 385-387.

2. Claim 5

As described above, Sorrentino discloses “curved retaining members 81.” *Id.*, 12:56.



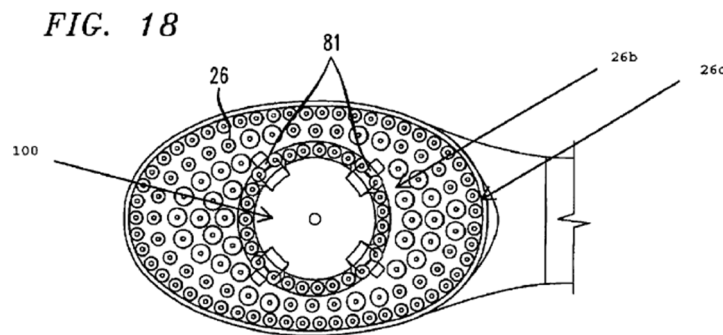
Id., FIGS. 17-18:

Although the retaining members are “curved” rather than specifically “angled” or “canted away from vertical” as recited in the claims of the ’332 Patent, it would have been obvious to a POSITA based on Sorrentino’s disclosure that angled retaining elements that are leaned/angled/canted against a capsule such as

described in the '332 Patent (*see, e.g.*, FIG. 1) could also be used. Ex. 1008, ¶¶ 389-391.

3. Claims 7 and 11

As shown in FIG. 18 of Sorrentino, below, the retaining members are each arranged between the vertical bristles and the cavity, in that the retaining members are directly adjacent the cavity while vertical bristles are disposed further away from the cavity:



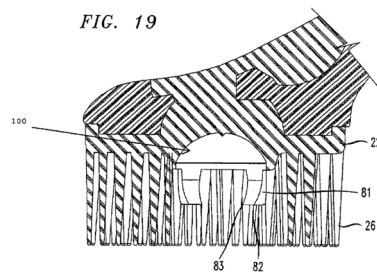
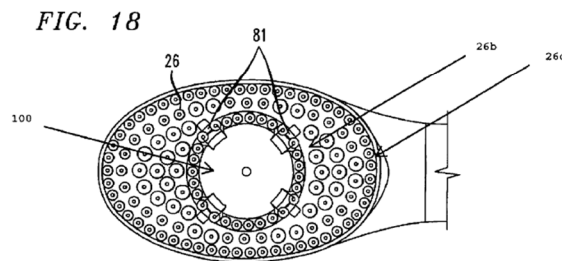
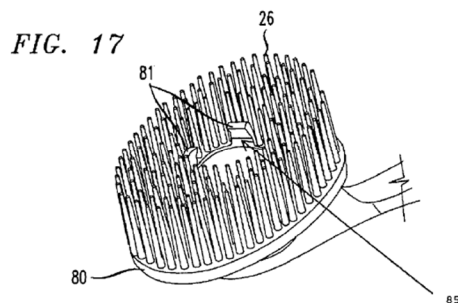
Id., ¶¶ 392-396.

4. Claims 8 and 13

Sorrentino discloses that its capsule can be at least a “dentifrice composition,” “antibacterial composition,” and/or “breath freshening composition,” and thus satisfies Claims 8 and 13. Specifically, Sorrentino states that the capsule can be an “oral care dispenser, such as a rupturable gel capsule 32” that “holds and applies a mouth care solution ... that may be a toothpaste, a gel, a mouthwash, or similar dentifrice or oral hygiene product, or a combination of the same.” Ex. 1013, 5:26-28, 5:55-59; Ex. 1008, ¶¶ 399-400.

5. Claims 9 and 14

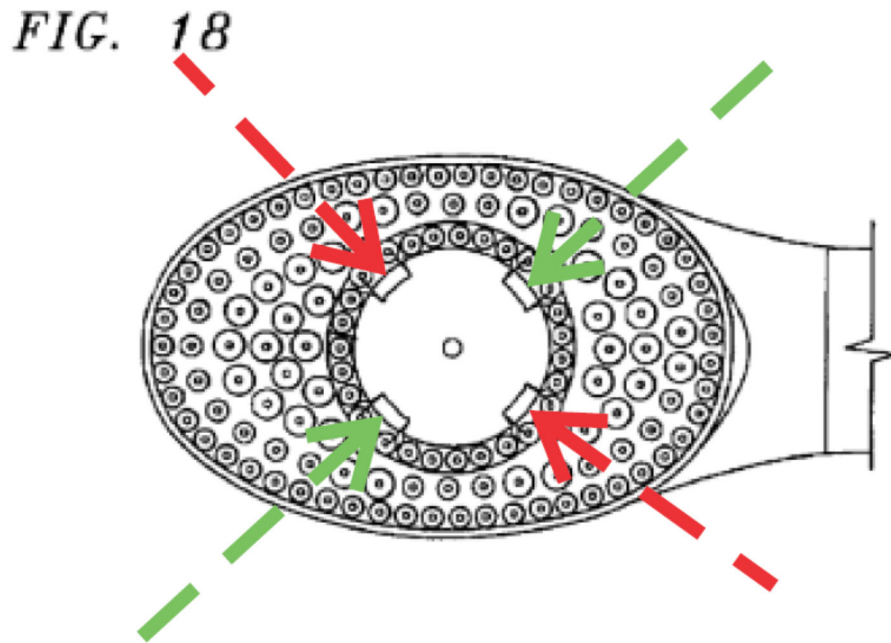
As described above, Sorrentino's brush head includes "retaining members 81 ... to hold an oral care dispenser ... beneath the distal ends of the bristles 26" in a "cavity 100 ... beneath and between the retaining members." Ex. 1013, 11:36-39, 12:38-43. Therefore, and as illustrated in FIGS. 17-19, below, Sorrentino renders obvious claims 9 and 14 because the capsule in Sorrentino is installed past the vertical bristles 26 and in the recess/cavity 100, and the capsule is retained in the recess/cavity by retaining members, of which there is both at least one pair of, and at least three, retaining members.



Ex. 1008, ¶¶ 403-406.

6. Claim 15

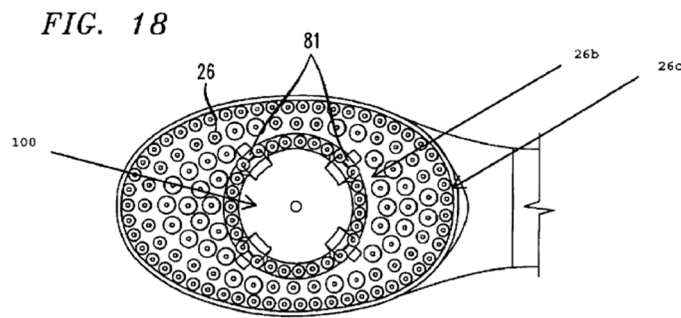
Sorrentino includes multiple pairs of retaining elements because Sorrentino discloses, as shown in annotated FIG. 18, below, two pairs of retaining elements:



Id., ¶¶ 26, 408-409.

7. Claims 16 and 17

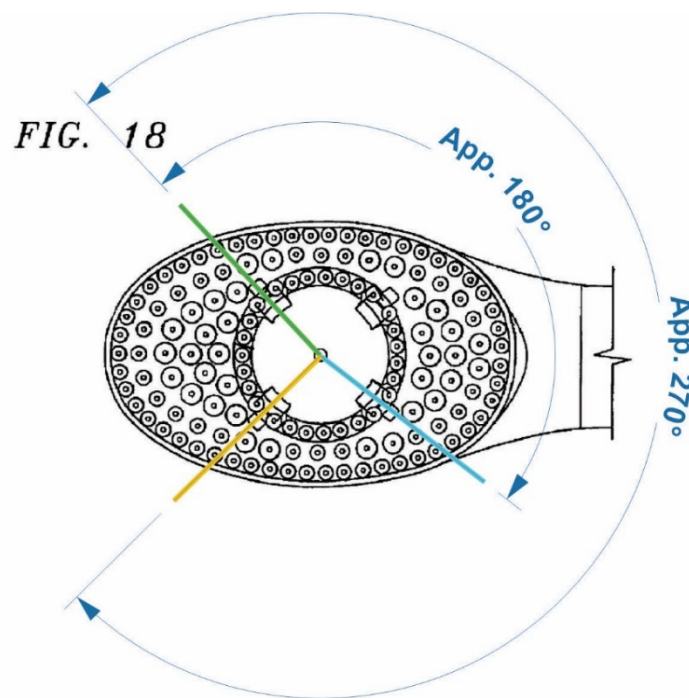
Sorrentino discloses all the elements of claims 16 and 17 because, as shown in FIG. 18 below, at least a portion of each retaining member in Sorrentino overlaps a portion of the recess/cavity 100:



Id., ¶¶ 412-413.

8. Claim 18

As described above regarding Claim 10, Sorrentino's retaining members are at a position not only at least 108° apart from at least one other capsule retaining element of the at least three capsule retaining elements relative to a center of the capsule receiving zone, but also at least 144° apart as recited in claim 18, as shown in annotated FIG. 18 of Sorrentino, below:

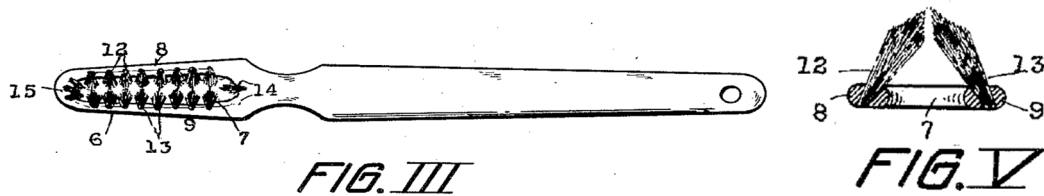


Id., ¶¶ 26, 415-417.

XIII. GROUND 6: CLAIMS 1, 2, AND 5-18 ARE OBVIOUS OVER SORRENTINO AND FITZ-GIBBON IF MEANS-PLUS-FUNCTION INTERPRETATION IS ADOPTED

A. Motivations to Combine

Fitz-Gibbon, like Sorrentino, is concerned with retaining dry/solid dentifrice. As described in Section VII(C), Fitz-Gibbon’s toothbrush has angled bristles over an opening to create a “dentifrice holding chamber or pocket” for “dry dentifrice”:



Ex. 1011, 1:79-87, FIGS. 3, 5.

Sorrentino uses its curved retaining members because they provide “a compressive force to hold the dispenser 32 in place” and “reliably resist prematurely rupturing the dispenser 32 before use.” Ex. 1013, 12:61-13:1; Ex. 1008, ¶¶ 418-422. Sorrentino achieves this because the entire bristle block, including the concave cavity, prongs (retaining members), and bristles, is injection molded as one piece. Ex. 1013, 6:59-63; Ex. 1008, ¶ 422. A POSITA, however, would have been motivated to replace the curved prongs with angled bristles as disclosed decades before in Fitz-Gibbon, and replace the molded vertical bristles with traditional

vertical bristles, using stapled nylon bristles, adhesives, or thermal welding to create a cheaper, more conventional, version of Sorrentino's toothbrush. Ex. 1008, ¶ 422.

Sorrentino and Fitz-Gibbon provided a POSITA with predictable options for retaining dentifrice by a toothbrush. A POSITA would have been strongly motivated to combine these options to create a cheaper, more conventional, toothbrush that still retains Sorrentino's dentifrice capsule. Such would require only ordinary skill and produce predictable results. *Id.*, ¶ 423.

B. Sorrentino and Fitz-Gibbon meet all claim elements.

1. Claims 1 and 10

Elements [1.0]-[1.5] and [10.0]-[10.5] are met for the same reasons as in Ground 5. Ex. 1008, ¶ 424.

[1.6]/[10.6] **“at least [one pair of/three] angled capsule retaining elements...”**

As explained in Section XII(B)(1), although Sorrentino's retaining members are “curved” rather than specifically “angled” or “canted away from vertical,” it would have been obvious based on Sorrentino's and Fitz-Gibbon's disclosures that angled retaining elements that are leaned/angled/canted against a capsule could also be used.

Specifically, if “angled capsule retaining elements” is found to be a means-plus-function term, it would be obvious to a POSITA based on Sorrentino's and Fitz-

Gibbon's disclosures to use other structures such as angled bristles to retain the capsule in a "dentifrice holding chamber or pocket" created by the angled bristles, as specifically taught/suggested by Fitz-Gibbon. See FIGS. 3 and 5 of Fitz-Gibbon:



Ex. 1008, ¶¶ 425-427.

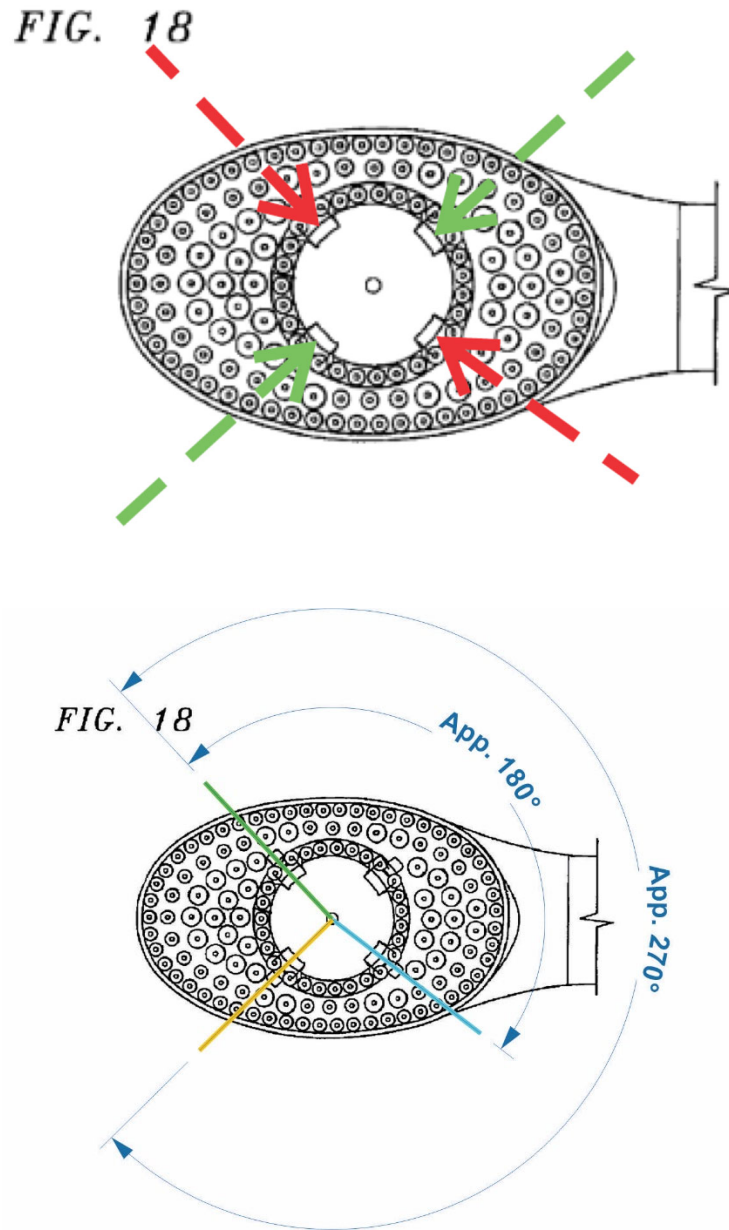
Since the angled bristles in the Sorrentino-Fitz-Gibbon combination would be disposed in the same positions as Sorrentino's retaining members, the angled bristles would include at least one pair of retaining members, and at least three retaining members, as explained in Section XII(B)(1). *Id.*, ¶ 428.

[1.7] **"...along diametrically opposing sides..."**

[10.7] **"...at least 108 degrees apart..."**

[1.8]/[10.8] **"...arranged to contact the oral care capsule."**

Since the angled bristles in the Sorrentino-Fitz-Gibbon combination would be disposed in the same positions as Sorrentino's retaining members, the angled bristles would be on diametrically opposing sides of the cavity 100, and at least at least 108° apart, and would contact the capsule, as explained in Section XII(B)(1).

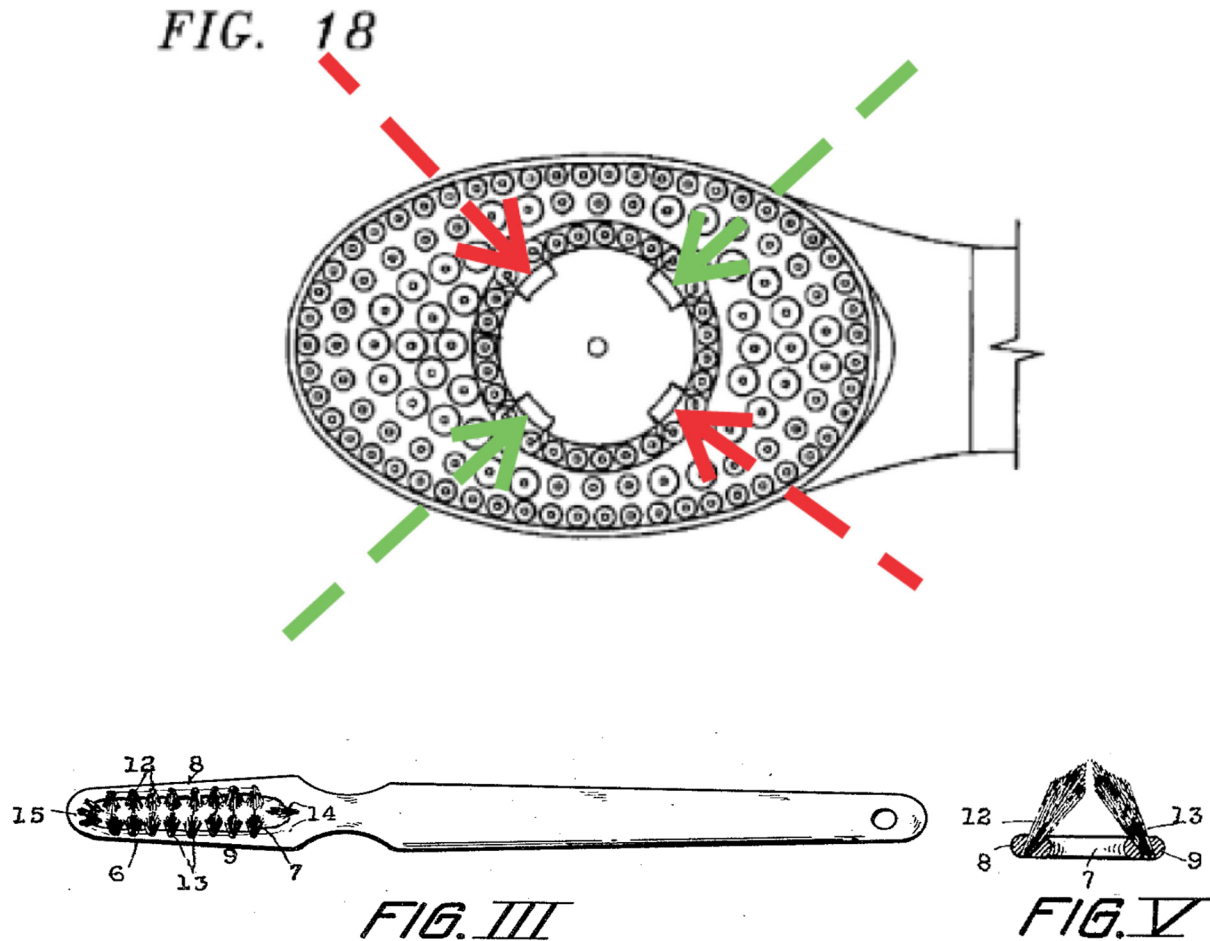


Ex. 1008, ¶¶ 26, 430-432.

2. Claim 2

Since the angled bristles in the Sorrentino-Fitz-Gibbon combination would be disposed in the same positions as Sorrentino's retaining members, the Sorrentino-

Fitz-Gibbon combination discloses multiple pairs of angled bristles canted away from vertical towards the receiving zone:



Ex. 1008, ¶¶ 26, 435.

Further, Sorrentino discloses or suggests its brush head includes a flexural portion to permit bristles to spread apart, because the “cleaning elements may be in the form of bristles made from conventional materials, such as nylon” and “could be made of a flexible resilient material” (Ex. 1013, 7:51-55), and “the bristles ... are independently flexible” (*Id.*, 12:15-17). Modifying Sorrentino’s retaining elements

to be angled bristles as taught by Fitz-Gibbon would naturally include using the same or similar materials as Sorrentino's vertical bristles. Ex. 1008, ¶¶ 436-437.

3. Claims 6 and 12

Claims 6 and 12 merely narrow “capsule retaining elements” to “angled bristles.” As described above, it would be obvious to a POSITA based on Sorrentino's and Fitz-Gibbon's disclosures to use other structures such as angled bristles to retain the capsule. *Id.*, ¶¶ 440-441.

4. Claims 5, 7-9, 11, and 13-18

Dependent claims 5, 7-9, 11, and 13-18 are met for the reasons above and for the same reasons as Ground 5. *Id.*, ¶ 433.

XIV. THERE ARE NO DISCRETIONARY FACTORS OTHERWISE FAVORING DENIAL OF INSTITUTION

A. § 325(d) Factors

The art and arguments herein are not “the same or substantially the same” as considered during prosecution. *Becton, Dickinson, & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (PTAB Dec. 15, 2017). None of Wolcott, Davidson, Fitz-Gibbon, or Young were analyzed in any Office Actions by the Examiner (Stephanie Newton/Berry). The patent numbers for Wolcott (“2262982”), Davidson (“2307493”), and Young (“1995374”) merely appear in Examiner Berry's search results (Ex. 1002, 96-101, 146-150, 202-203, 205-206, 282-283), and were not even in the “Notices of References Cited” (Ex. 1002, 39, 93, 142, 195, 281), nor on the

face of the '332 Patent. Young *was* evaluated (by a different examiner) in somewhat more detail in a continuation application with claims directed to the dispenser, but only for aspects of Young's dispenser. Ex. 1004, 66-78. Patent Owner did not distinguish Young's toothbrush from the '332 Patent's toothbrush. *Id.*, 53-54. Fitz-Gibbon was not cited at all.

Examiner Berry indicated Sorrentino discloses the invention claimed in the '332 Patent, but did not assert Sorrentino due to the claimed priority date. Ex. 1002, 36-37.

Examiner Berry specifically evaluated only three references, US2006/0165473 ("Hohlbein"), US2007/0254260 ("Alden"), and US2008/0014010 ("Bartschi"). *Id.*, 81-92, 135-41, 187-94, 275-80. Patent Owner argued throughout prosecution that Hohlbein, shown below, "clearly indicates that the bristle block—*not* the plurality of bristles—performs the function of retaining a gel capsule." *Id.*, 56-60, 230-233.

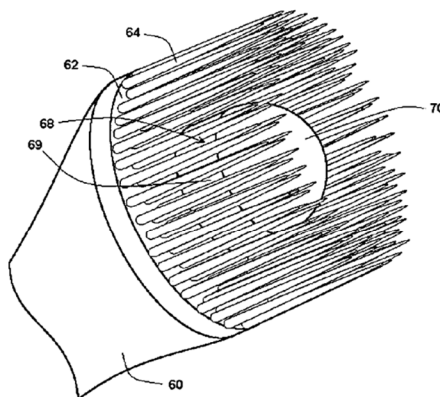


FIG. 15

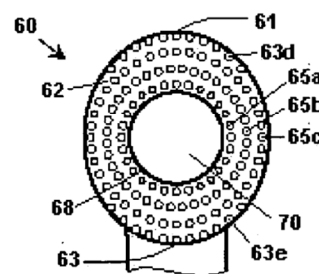


FIG. 16

Alden was merely cited for elements in claims 3-4, which are not challenged here. *Id.*, 87-88. Patent Owner argued Bartschi disclosed a back or side cavity, but not a front recess or retaining elements. *Id.*, 233-234.

Unlike the prior art evaluated during prosecution, the prior art of this Petition discloses toothbrushes that retain dentifrices in a front recess using angled retaining elements, particularly, angled bristles or Sorrentino's retaining members. The Office erred in failing to consider the art of this Petition, either alone or in the asserted combinations. The Office also erred in not challenging the claimed priority date after Patent Owner's extensive amendments, and, relatedly, in not rejecting the claims using Sorrentino. Therefore, the Petition should not be denied.

B. NHK-Fintiv Factors

The pending litigation provides no reason to deny institution. *See Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11, 5-6 (PTAB Mar. 20, 2020). The strong invalidity showing in this Petition independently warrants institution. Nonetheless, the other *NHK-Fintiv* factors also favor institution. *First*, Petitioner intends to file a motion to stay when this Petition is filed, and again upon institution if necessary. *Second*, the institution decision is estimated in January 2023, with a final written decision estimated in January 2024, and the district court has not set a trial date and is not expected to set a trial date until more than 190 days after a claim construction decision. Ex. 1015, 2, 12. *Third*, there is and will be little investment in the district

court case because a *Markman* hearing is not scheduled to occur until January 18, 2024. Ex. 1015, 2. *Fourth*, there is non-overlap of issues because Petitioner stipulates, if instituted, Petitioner will not pursue invalidity in district court on any grounds raised or that reasonably could have been raised. Finally, Petitioner expeditiously filed this Petition *approximately five months* after Patent Owner served its Complaint (Ex. 1006; *see also* Ex. 1014), less than *three weeks* after Patent Owner's infringement contentions deadline (see Ex. 1015, 1) and *approximately seven months* prior to the statutory time bar.

XV. CONCLUSION

Claims 1, 2, and 5-18 are unpatentable under Pre-AIA §103. Petitioner requests cancellation of claims 1, 2, and 5-18.

Dated: July 26, 2023

Respectfully submitted,

By: /Amy E. LaValle/
Amy E. LaValle
Registration No. 51,092

CERTIFICATE OF WORD COUNT UNDER 37 C.F.R. § 42.24(d)

The undersigned certifies that the word count of the foregoing PETITION FOR *INTER PARTES* REVIEW, excluding the table of contents, table of authorities, exhibit list, mandatory notices, certificate of service, certificate of word count, and any appendix of exhibits or claim listing, is 13,933.

Dated: July 26, 2023

/Amy E. LaValle/
Amy E. LaValle
Registration No. 51,092

CERTIFICATE OF SERVICE

The undersigned certifies that a copy of the foregoing PETITION FOR *INTER PARTES* REVIEW and all exhibits identified herein were served on July 26, 2023 at the following address of record for the subject patent:

WITHROW & TERRANOVA, P.L.L.C. via FedEx Overnight
106 Pinedale Springs Way
Cary, NC 27511

Courtesy Copy via FedEx Overnight to Patent Owner's Litigation Counsel:

Joseph J. Zito
DNL Zito Castellano
1250 Connecticut Ave., Suite 700
Washington, D.C., 20036
Telephone: 202-466-3500
jjzito@dnlzito.com

Dated: July 26, 2023

/Amy E. LaValle/
Amy E. LaValle
Registration No. 51,092