

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
Patent 8,881,332 B2

Before RYAN H. FLAX, TIMOTHY G. MAJORS, and
MICHAEL A. VALEK, *Administrative Patent Judges*.

FLAX, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Noble Innovations NC LLC (“Patent Owner”) is the owner of U.S. Patent 8,881,332 B2 (“the ’332 patent”). Paper 11, 1. On July 26, 2023, Colgate-Palmolive Company (“Petitioner”) filed a Petition for *inter partes* review challenging the patentability of claims 1, 2, and 5–18 of the ’332 patent (claims 3 and 4 are not challenged). Paper 1, 1 (“Pet.”). On November 23, 2023, Patent Owner filed a Preliminary Response to the Petition. Paper 5 (“Prelim. Resp.”).¹

Under 37 C.F.R. § 42.4(a), we have authority to determine whether to institute trial in an *inter partes* review. We may institute an *inter partes* review if the information presented in the petition filed under 35 U.S.C. § 311, and any preliminary response filed under § 313, shows that there is a reasonable likelihood that Petitioner would prevail with respect to at least one of the claims challenged in the petition. 35 U.S.C. § 314.

After reviewing the parties’ submissions in view of the preliminary record, we conclude Petitioner demonstrates a reasonable likelihood it would prevail in showing that at least one challenged claim of the ’332 patent is unpatentable under the presented grounds. *See* Pet.; Prelim. Resp.

¹ The Preliminary Response lacks page numbering, thus, we cite to the paper according to its pages counted sequentially, beginning with the first page following the table of contents as page “1.” To clarify the Board’s expectations, all briefing must include page numbering, witness testimony in declarations must include paragraph numbering, and all evidence submitted as a PDF should be OCR’d and have recognizable text, which can be searched and copied, and should be cited by exhibit number rather than some other name. Submissions not meeting these expectations may be refused. It is also preferred that, when filing evidentiary exhibits, they are given a short, descriptive name in addition to the number.

Therefore, we grant institution of *inter partes* review. Our reasoning is discussed below.

A. REAL PARTIES-IN-INTEREST

Petitioner states the real parties-in-interest are, “Colgate-Palmolive Company (Petitioner); Walmart Inc. (co-defendant in underlying district court case); and Target Corporation (co-defendant in underlying district court case).” Pet. 1. Patent Owner states, “Noble Innovations,” which we understand to mean Patent Owner, is the real-party-in-interest. Paper 11, 1.

B. RELATED MATTERS

Petitioner states,

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.

Pet. 1.

Patent Owner states,

As of December 15th, 2023 the ’332 patent has been involved in *Noble Innovations v. Colgate-Palmolive Company et al.*, 8:22-cv-03373 (District of Maryland).

The ’332 patent issues from application No. 12/101,446. The ’332 patent is a continuation in part of US Patent application No. 11/840,627, which is now abandoned. US Patent 9,808,077 is a continuation of the ’332 patent.

Paper 11, 1.

C. THE '332 PATENT AND RELEVANT BACKGROUND

The '332 patent issued on November 11, 2014, from U.S. Application 12/101,446, which was filed on April 11, 2008. Ex. 1001, codes (10), (45), (21), (22). The '332 patent indicates priority to, as a continuation-in-part of, an earlier application filed on August 17, 2007; this priority date is contested by Petitioner. *Id.* at code (63); Pet. 11–18; *see infra* Section II.E. The '332 patent describes its invention as follows:

A toothbrush includes a brush head having a capsule receiving zone sized to receive an [*sic*] dentrifice capsule, and a plurality of angled bristles adapted to retain the capsule in such zone. Loading of such toothbrush with a capsule may be performed with a dispenser including a toothbrush manipulation element adapted to move a retention structure associated with the brush head, and dispensation element adapted to deliver the capsule into the receiving zone. Such dispenser may include a desiccant material disposed to receive moisture from a capsule storage container. A dispenser may further include a plurality of toothbrush insertion apertures each adapted to receive a portion of a different toothbrush, so as to enable multiple users each having different toothbrushes to use the same dispenser without requiring contact between multiple brushes and single capsule interface surface of the dispenser.

Ex. 1001, Abstract.

A toothbrush as mentioned in the Abstract is illustrated in the '332 patent at Figure 1, which we reproduce below:

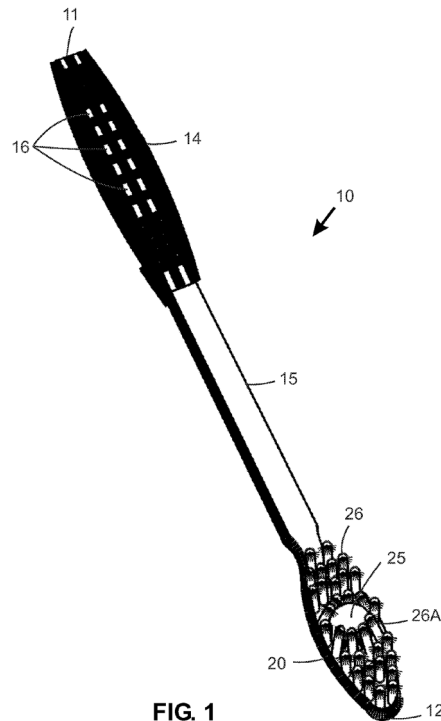


FIG. 1

Id. at Fig. 1. Figure 1 shows a perspective view of toothbrush 10 having handle 14, shaft 15, and brush head 20. *Id.* at 4:57–61. Brush head 20 has capsule receiving zone 25, which “may include a recess,” “within a plurality of angled bristles 26A,” which “retain an oral care capsule (not shown)” in “the capsule receiving zone 25.” *Id.* at 4:62–5:1.

The '332 patent states that such oral care capsules “are known.” *Id.* at 2:51–52. The '332 patent further states that “ten angled bristles 26A are equally spaced around the perimeter of a circular recess (spanning 360 degrees) defining the capsule receiving zone,” and that “[c]onventional bristles 26 may be further provided apart from the capsule receiving zone 25.” *Id.* at 5:5–9.

The '332 patent concludes with eighteen claims, of which claims 1 and 10 are independent claims. Claims 1 and 10 are reproduced below:

1. A toothbrush comprising a brush head that includes:
a front surface;
a back surface;
a plurality of vertical bristles extending upward from the front surface;

a capsule receiving zone sized to receive an oral care capsule, 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; and

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, wherein each pair of the at least one pair [of] 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; and wherein at least a portion of each angled capsule retaining element of the at least one pair of capsule retaining elements is arranged to contact the oral care capsule.

Ex. 1001, 10:30–50.

10. A toothbrush comprising a brush head that includes:
a front surface and a back surface that opposes the front surface;

a plurality of bristles extending upward from the front surface and arranged distal from a center of the front surface;

a capsule receiving zone 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; and

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, 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; and wherein at least a portion of each angled capsule retaining element of the at least three angled capsule retaining elements is arranged to contact the oral care capsule.

Id. at 11:25–12:5.

Comparing the quoted claim language above, the two independent claims are very similar, but claim 10 requires that there are “at least three” (rather than two) “angled capsule retaining elements,” which are each “at least 108 degrees apart” (rather than diametrically opposing).

Independent claim 1 is followed by challenged dependent claims 2, 5–9, 15, and 16, which depend directly or indirectly from claim 1. *Id.* at 10:51–11:24, 12:25–32. Similarly, challenged claims 11–14, 17, and 18 depend directly or indirectly from independent claim 10. *Id.* at 12:6–14, 12:33–43. These dependent claims further define the recited toothbrush, its oral care capsule, or a method of loading the oral care capsule on the toothbrush.

D. PETITIONER’S ASSERTED GROUNDS FOR UNPATENTABILITY

Petitioner asserts six (6) grounds for unpatentability of the challenged claims, as follows:

Ground	Claims Challenged	35 U.S.C. § ²	Reference(s)/Basis
1	1, 2, 5–18	103(a)	Wolcott, ³ Davidson, ⁴
2	1, 2, 5–18	103(a)	Wolcott, Davidson, Fitz-Gibbon ⁵
3	1, 2, 5–18	103(a)	Young, ⁶ Davidson
4	1, 2, 5–18	103(a)	Young, Davidson, Fitz-Gibbon
5	1, 5, 7–11, 13–18	103(a)	Sorrentino ⁷
6	1, 2, 5–18	103(a)	Sorrentino, Fitz-Gibbon

Id. In support of these grounds for unpatentability, Petitioner submits, *inter alia*, the Declaration of Timothy P. Fletcher (Ex. 1008). At this stage of the proceeding there is no dispute that Mr. Fletcher is competent to testify as to the subject matter of his declaration. *See generally* Prelim. Resp.; *see also* Ex. 1008 ¶¶ 8–16, 45, App’x A (witness’s background, experience, and CV). Patent Owner has, as yet, not submitted any evidence.

² The actual filing date of the ’332 patent is April 11, 2008, which is before the relevant AIA revisions to the Patent Act took effect on March 16, 2013. 35 U.S.C. § 100 (note). Therefore, pre-AIA § 102 and § 103 apply.

³ F.E. Wolcott, US 2,262,982, issued Nov. 18, 1941 (Ex. 1009, “Wolcott”).

⁴ N.J. Davidson, US 2,307,493, issued Jan. 5, 1943 (Ex. 1010, “Davidson”).

⁵ J.J. Fitz-Gibbon, US 1,346,536, issued July 13, 1920 (Ex. 1011, “Fitz-Gibbon”).

⁶ J.D. Young, US 1,995,374, issued Mar. 26, 1935 (Ex. 1012, “Young”).

⁷ Alan Sorrentino et al., US 8,240,937 B2, issued Aug. 14, 2012 (Ex. 1013, “Sorrentino”).

II. DISCUSSION

A. LEGAL STANDARDS

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion never shifts to Patent Owner.⁸ *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review).

An *inter partes* review may be instituted if the information presented by a petitioner in the petition, in view of the patent owner’s preliminary response and the preliminary record, shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least one of the claims challenged in the petition. 35 U.S.C. § 314.

The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398 (2007), reaffirmed the framework for determining obviousness set forth in *Graham v. John Deere Co.*, 383 U.S. 1 (1966). The *KSR* Court summarized the four factual inquiries set forth in *Graham* (383 U.S. at 17–18) that are applied in determining whether a claim is unpatentable as obvious under 35 U.S.C. § 103(a) as follows: (1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art

⁸ At times we refer to Patent Owner’s arguments as not persuasive; however, we do not shift the ultimate burden from Petitioner. Such unpersuasiveness is in the context of the record and parties’ arguments.

and the claims at issue; (3) resolving the level of ordinary skill in the art;⁹ and (4) considering objective evidence indicating obviousness or non-obviousness.¹⁰ *KSR*, 550 U.S. at 406.

“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* at 416. “[W]hen the question is whether a patent claiming the combination of elements of prior art is obvious,” the answer depends on “whether the improvement is more than the predictable use of prior art elements according to their established functions.” *Id.* at 417.

B. ORDINARY LEVEL OF SKILL IN THE ART

Petitioner contends:

A POSITA,^[11] 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.

Pet. 4 (citing Ex. 1008 ¶ 44).

Patent Owner’s briefing refers to the understanding of a person of ordinary skill in the art or POSITA, but Patent Owner neither proposes a

⁹ See *infra* Section II.B.

¹⁰ At this stage of the proceeding, there is no evidence of objective indicia of non-obviousness.

¹¹ Petitioner uses the acronym POSITA to reference the person of ordinary skill in the art.

definition of the ordinarily skilled artisan nor opposes Petitioner’s proposed definition. *See generally* Prelim. Resp.

At this stage in the proceeding, we accept and use Petitioner’s proposed and unopposed definition of the ordinarily skilled artisan. It appears that Petitioner’s proposed definition comports with the level of skill in the art reflected in the prior art of record and the ’332 patent, itself. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (“the prior art itself [may] reflect[] an appropriate level” as evidence of the ordinary level of skill in the art) (quoting *Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163 (Fed. Cir. 1985)).

C. CLAIM CONSTRUCTION

Petitioner asserts that the claim language “angled capsule retaining elements” is a means-plus-function limitation under 35 U.S.C. § 112(6), where the function is “retaining an oral care capsule in a capsule receiving zone,” and the Specification’s corresponding structure is “angled bristles.” Pet. 8–11 (citing Ex. 1001, 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; Ex. 1002, 224; Ex. 1008 ¶¶ 96–97).

Petitioner argues that “angled capsule retaining elements” is non-structural and includes the generic placeholder nonce word “elements,” modified by functional language, and the claim does not further recite sufficiently definite structure for the elements. *Id.* at 8–9. Thus, it is Petitioner’s position that this limitation, although not using the presumptive word “means,” should be interpreted to be a means-plus-function limitation. Further, Petitioner argues that the only structure disclosed in the ’332 patent’s Specification that performs the claimed function is “angled

bristles,” and that the Specification’s express mentioning of the term “retaining element” relates to a non-claimed feature having a different function, i.e., a movable back cover on the toothbrush to contain rear-loaded capsules in the head. *Id.* at 11 (discussing Ex. 1001, 5:10–19, 6:8–25; Ex. 1002, 228, 353–355).

Patent Owner does not directly address Petitioner’s claim construction position. *See generally* Prelim. Resp. However, even if not addressing whether the claim language is a means-plus-function limitation, Patent Owner appears to agree with Petitioner that the claims’ scope includes angled bristles as the recited retaining elements, as disclosed in the Specification, although not expressly conceding at this point that the claims are limited to the disclosed angled bristles structure and equivalents under 35 U.S.C. § 112(6). *See id.* at 3–4 (citing paragraph 36 and Figure 1 of the application that issued as the ’332 patent).

For the purposes of this institution decision, we find it unnecessary to construe any claim language because there is no dispute that the “angled capsule retaining elements” limitation recited by the claims *includes angled bristles*, even if it may not be limited to only such a structure (and its equivalents), and we find that *angled bristles* appear to be taught in the prior art, as discussed below. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))). Thus, whether or not the disputed claim language constitutes a means-plus-function limitation is not determinative at this stage of the proceeding.

D. PETITIONER’S ASSERTED PRIOR ART

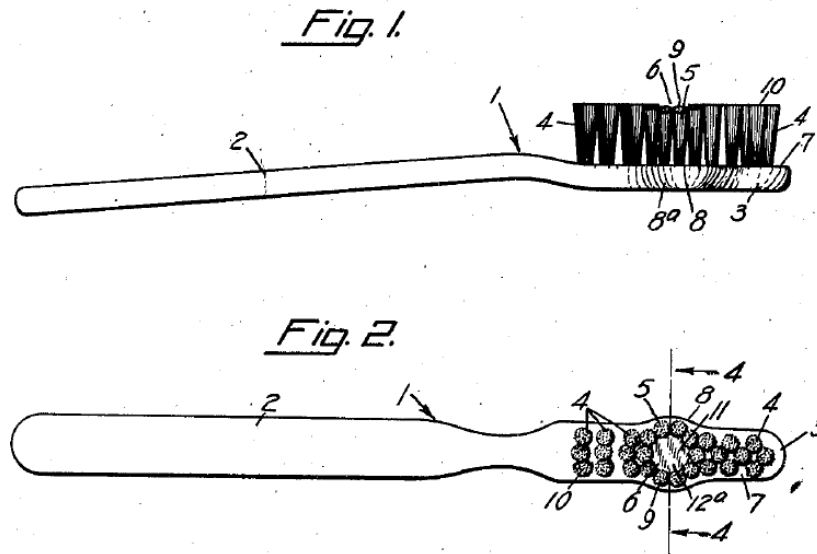
1. Wolcott (Ex. 1009)

Wolcott is a U.S. Patent that issued on November 18, 1941. Ex. 1009, cover page. There is currently no dispute that Wolcott is prior art. *See generally* Prelim. Resp.

Wolcott discloses a “TOOTHBRUSH,” having bristles incorporated into the brush to “provide an improved pocket for receiving a dentifrice pellet” that can be used in the cleaning of the teeth and massaging of the gums. Ex. 1009, 1:19–26.¹² Wolcott further states that its invention “provide[s] . . . [an] arrangement of bristles and pocket whereby the dentifrice pellet, while readily inserted, is effectively maintained against accidental separation from the brush,” accomplished via “improved supplementary bristle means disposed in the pellet aperture,” which “cooperat[e] in an improved manner.” *Id.* at 1:31–39.

¹² Wolcott does not include column numbering like contemporary U.S. patents. Therefore, we cite to Wolcott’s columns sequentially by counting. We do the same for the Davidson, Fitz-Gibbon, and Young references, each of which are older U.S. patents, similar to Wolcott in this regard.

Such a toothbrush and associated dentifrice pellet pocket are illustrated at Figures 1 and 2, which are reproduced below:



Id. at Figs. 1, 2. Figures 1 and 2, above, show toothbrush 1 from a side and top view, respectively. Toothbrush 1 has handle 2, bristle carrying portion 3 with bristles 4 “disposed in any usual manner,” but also bristles 5, which “are disposed in an improved manner . . . arranged around a central pellet recess 6 which is free from bristles and adapted to receive a dentifrice pellet.” *Id.* at 2:19–42. The pellet “may bottom on the usual flat surface 7 of the bristle carrying portion from which all bristles project.” *Id.* at 2:43–45. Bristles 5 are shown to “extend clear around the pellet recess 6” and “in such manner as thereby effectually to retain a pellet in said recess.” *Id.* at 2:49–3:1.

This is illustrated further by Figure 4, reproduced below:

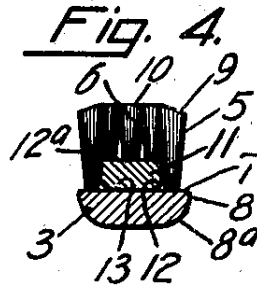


Figure 4 is a cross-section view of toothbrush 1 of Figure 2, above, through line 4-4, and shows dentifrice pellet 11 held in recess 6 by the brush structure. *Id.* at 3:18–20. Wolcott explains that pellet 11 was positioned in this way by being inserted past bristles 5 (spreading them in process) into recess 6 so that the bottom surface 13 of pellet 11 rests on flat surface 7 of bristle carrying portion 3 of toothbrush 1 forming the bottom of recess 6. *Id.* at 3:26–40. Further, in this position, top 12a of pellet 11 is disposed close to bristles 5 in their expanding tufts and, due to the resiliency of bristles 5, the mouth of recess 6 is reduced and pellet 6 is retained therein, even if the toothbrush is inverted. *Id.* at 3:40–4:9.

These features of the Wolcott toothbrush 1 are included as limitations in, for example, Wolcott's claim 3, which reads:

3. A **toothbrush** having a bristle carrying closed back portion and an imperforate closed area, integral with said portion and on the bristle carrying face thereof providing a dentifrice pellet supporting surface on said face, and **dentifrice disc receiving recess** means having a closed bottom formed by said imperforate area, and said recess also having a normally open opposite end and **walls formed by the bristles** on said back and said bristles disposed to **enable a dentifrice disc to be inserted freely through the open end of said recess and rest on said imperforate area**, adjacent the bottoms of said bristles, the **bristle tufts forming the side walls of said recess** projecting

Id. at Figs. 1–3. The figures above show a toothbrush (not labeled) having handle 10, head 11, well 12 within head 11, and bristles 13 surrounding well 12 (a recess in the head 11), where Figure 1 shows the toothbrush from above, Figure 2 shows the toothbrush from a cross-sectional side view, and Figure 3 shows the toothbrush from a cross-sectional end view. *Id.* at 1:23–2:1. Bristles 13 are described as completely surrounding well 12 and extending at right angles from head 11 so as to provide “an enlarged opening with the mass of bristles and above the well 12.” *Id.* at 2:1–7.

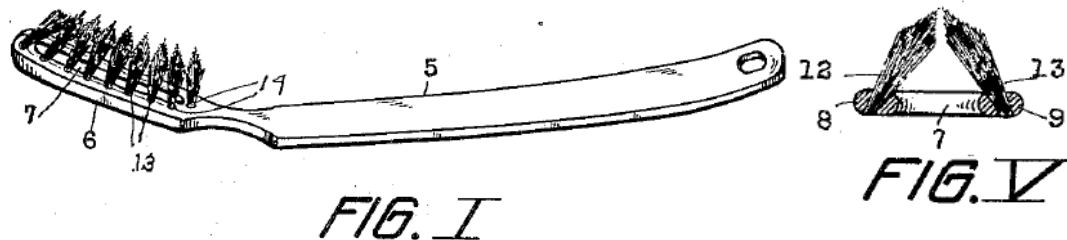
A “dentifrice may be poured into this central opening created by the bristles 12 extending around the well 12” and “the bristles provide sides and ends to this receiving area in the bristles” such that supplied “dentifrices may fall downwardly and be received and held by the well 12.” *Id.* at 2:8–14. Davidson states that “[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.* at 3:20–24.

3. Fitz-Gibbon (Ex. 1011)

Fitz-Gibbon is a U.S. Patent that issued on July 13, 1920. Ex. 1011, cover page. There is currently no dispute that Fitz-Gibbon is prior art. *See generally* Prelim. Resp.

Similar to Wolcott and Davidson, Fitz-Gibbon discloses a toothbrush having bristles on the face and an opening in the toothbrush’s head that define a “pocket for holding [a] dentifrice.” Ex. 1011, 1:18–23.

Such a toothbrush is illustrated at Figures 1 and 5, which we reproduce side-by-side below:



Id. at Figs. 1, 5. Figure 1 is a side view, and Figure 5 is a cross-sectional end view, of a toothbrush having handle 5, head 6, opening 7 in head 6, sides 8, 9, and tufts/clusters of bristles 12, 13, 14. *Id.* at 1:38–2:65.

Fitz-Gibbons states:

The series 12 and the series 13 [bristles] converge inwardly so that their tips are but slightly spaced from each other. On the portion 10 a brush tuft 14 is embedded at its inner end and extends inwardly toward the tips of the series 12 and 13 [bristles] and are sharply inclined relative thereto so that the tips of said tufts 14 will engage the lingual surfaces of the teeth.

Id. at 2:64–73. And, further: “The bristles are so disposed on the brush head as to provide a dentifrice holding chamber or pocket and the opening 7 permits of the deposition of the dentifrice in said chamber or pocket through the back of the brush head.” *Id.* at 2:79–84.

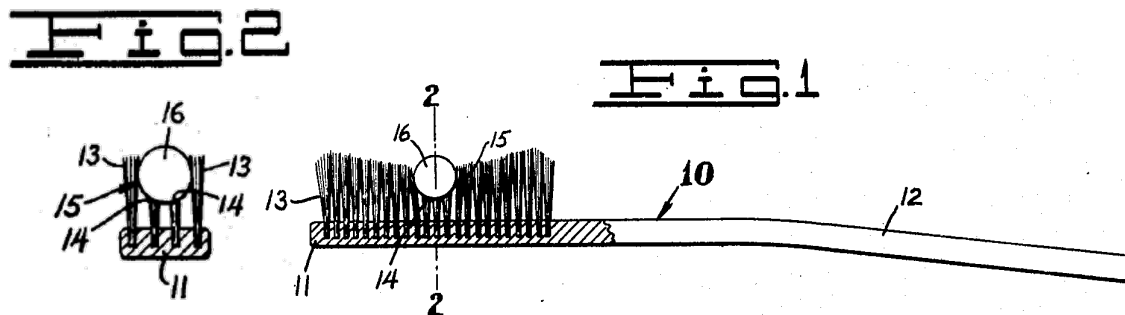
4. Young (Ex. 1012)

Young is a U.S. Patent that issued on March 26, 1935. Ex. 1012, cover page. There is currently no dispute that Young is prior art. *See generally* Prelim. Resp.

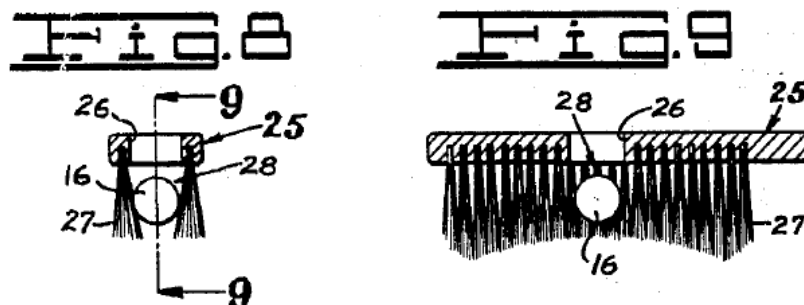
Like Wolcott, Davidson, and Fitz-Gibbon, Young discloses a dentifrice holding toothbrush having “bristles wherein a portion of the

bristles are arranged to form a pocket for the reception of a pellet of dentifrice.” Ex. 1012, 1:1–9. Several embodiments of such a toothbrush are disclosed in Young, which position the pocket and inserted dentifrice in a variety of locations on the toothbrush head, e.g., resting above bristles’ tips, held within bristles and below their tips, and at a distal tip of the toothbrush.

These embodiments are illustrated at Figures 1, 2, and 8–11, reproduced below:

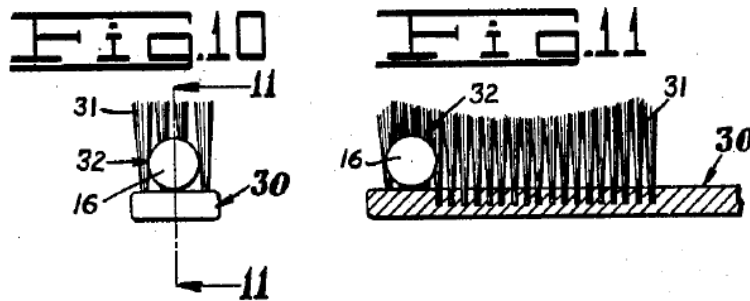


Id. at Figs. 1, 2. Figure 1 shows a side view, partly cross-sectioned, and Figure 2 shows an end cross-sectional view through line 2-2 of Figure 1, of toothbrush 10, which has head 11, handle 12, bristle tufts 13, shorter tufts 14 providing a pocket 15, for dentifrice pellet 16. *Id.* at 1:16–50.



Id. at Figs. 8, 9. Figure 8 shows an end cross-sectional view, and Figure 9 shows a side cross-sectional view through line 9-9 of Figure 8, of another

toothbrush 25 having a head with a hole 26 therethrough, bristles 27, forming a pocket 28 for dentifrice 16. *Id.* at 1:28–29, 2:21–26. According to Young, “[t]he bristles are resilient and thus when a pellet is passed through the hole 26 it is engaged and retained by the bristles as shown in Figs. 8 and 9.” *Id.* at 2:26–29.



Id. at Figs. 10, 11. Figure 10 shows an end cross-sectional view, and Figure 11 shows a side cross-sectional view through line 11-11 of Figure 10, of another toothbrush 30 having bristles 31 forming pocket 32 for dentifrice pellet 16. *Id.* at 2:30–34. According to Young, “[t]hese bristles in the center of the brush at one end are omitted thus forming a pocket 32 in which the pellet 16 will be retained in place by the resiliency of the bristles.” *Id.*

5. Sorrentino (Ex. 1013)

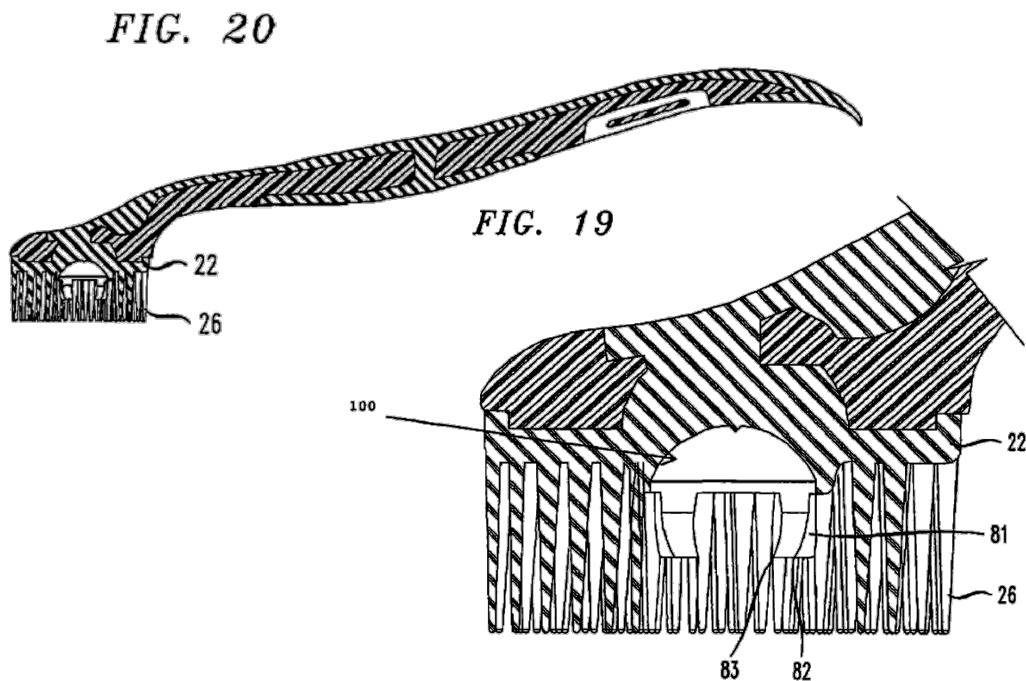
Sorrentino is a U.S. Patent that issued on August 14, 2012, from U.S. Application 12/018,817, which was filed on January 24, 2008. Ex. 1013, codes (45), (21), (22). Sorrentino indicates priority to a series of U.S. and international applications spanning a range of filing dates from September 5, 2002, to December 21, 2005. *Id.* at code (63). The parties dispute whether Sorrentino is prior art. *See* Pet. 11–18, 92; Prelim. Resp. 1–5; *see infra* Section II.E.

Sorrentino indicates it is directed to the following:

An oral care toothbrush includes a head mounted to one end of the handle containing a plurality of oral care elements. An oral care accessory is mounted to the opposite end of the handle. An oral care dispenser is mounted in the head within the cleaning field defined by the oral care elements. The oral care dispenser may be held in place by a plurality of prongs located in the field defined by the oral care elements. The toothbrush may be made of small size and of lightweight so as to be readily portable for use away from the home.

Ex. 1013, Abstract.

A toothbrush as noted in the Abstract is illustrated at Figures 19 and 20, which are reproduced, side-by-side, below:



Id. at Figs. 19, 20. Figure 20 (above-left) shows a cross-sectional view of a toothbrush and Figure (above-right) shows an enlarged cross-sectional view of the head of the toothbrush. *Id.* at 3:58–61. Toothbrush 10 (not labeled) has head 12/80 (not labeled) and handle 14 (not labeled). *See id.* at 4:1–4

(describing Figs. 1–4), 11:35–13:32. Head 12 includes bristle or cleaning element block 22 having bristles or fingers 26, and cavity 100 with a series of retaining members 81 for holding an oral care dispenser, such as a bead of dentifrice. *Id.* at 4:49–61, 11:35–13:32. Some or all of the cleaning elements 26 may be angled at various angles with respect to the outer surface of head 12, and retaining members 81 may be curved inwardly to hold the dentifrice in place. *Id.* at 5:17–21, 12:51–54. Cavity 100 may have retaining members 81 laid out in a variety of shapes, e.g., a triangle, a square, or a rectangle. *Id.* at 12:38–45.

E. PRIORITY

As noted above, Petitioner disputes that the '332 patent's claims are entitled to priority to any earlier filing date. Pet. 11–18. Petitioner asserts that “[n]umerous claim elements lack support in the parent application ([the] '627 Application' (Ex. 1003)), including”:

- (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. . . .
- (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. . . .
- (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. . . . [and]

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

Id. at 11–15 (citing, *inter alia*, Ex. 1008 ¶¶ 102–106). Petitioner further argues that, if the “angled capsule retaining elements” claim language is not a means-plus-function limitation, meaning the claims are not limited to only angled bristles (and equivalents) as such retaining elements, then the claims are further not entitled to priority to the parent application because it fails to provide support for any such structure broader than angled bristles. *Id.* at 16–18 (citing, *inter alia*, Ex. 1008 ¶¶ 107–108).

Patent Owner argues that the ’332 patent’s claims are entitled to priority to the August 17, 2007, filing date of the ’627 application. Prelim. Resp. 2–5. Patent Owner argues that, other than the subject matter directed to a dentifrice dispensing device, the disclosure of the ’332 patent and that of the ’627 application are the same and, further, that each of the above listed seven claim elements are supported by that disclosure. *Id.* (citing Ex. 1001, 5:5–8, 6:46, 9:2–10:16, Fig. 11; Ex. 1003 ¶¶ 29, 36, 41, Fig. 1).¹³

At this point, we need not decide whether the ’332 patent’s claims are entitled to priority to the ’627 application’s filing date because such a determination would serve only to confirm whether the Sorrentino reference

¹³ We note, Patent Owner does not explicitly cite the exhibits of record, but merely identifies the ’332 patent and the ’627 application. In future briefing, the parties should expressly identify exhibits of record when citing to evidence.

is prior art.¹⁴ Because we find, as discussed below, that Petitioner has met its initial burden to show a reasonable likelihood that it would prevail at trial with respect to at least one of the claims challenged under asserted unpatentability grounds not requiring Sorrentino (Grounds 1–4), we need not further address this issue for institution. Our review of the preliminary record, however, suggests that the claims are directed to subject matter that is likely sufficiently described in the disclosure common to the ’332 patent and the ’627 application, particularly Figure 1, even if not disclosed in the verbatim language of the claims.

If the issue of priority remains important to either party’s positions at trial, the parties are invited to further explore the matter in their briefing at trial.

F. GROUND 1 AND 2—OBVIOUSNESS OVER WOLCOTT, DAVIDSON,
AND FITZ-GIBBON

We find the facts and allegations under Ground 2 subsume those of Ground 1. *See* Pet. 26–58. We also find Patent Owner’s positions opposing Grounds 1 and 2 substantially overlap. *See* Prelim. Resp. 6–11. For these reasons, we discuss the two grounds together.

1. Parties’ Positions

Under Grounds 1 and 2, Petitioner challenges independent claims 1 and 10, and their dependent claims 2, 5–9, and 11–18 as obvious over Wolcott and Davidson, and over these two references also combined with Fitz-Gibbon. Pet. 26–58 (citing, *inter alia*, Ex. 1008 ¶¶ 26, 116–122, 124–

¹⁴ At this stage of the proceeding, neither party argues that, e.g., the ordinarily skilled artisan’s qualifications and background knowledge materially changed from August 2007 to April 2008.

125, 128, 130–140, 142–157, 160–164, 166–167, 170–171, 175–176, 179–180, 183–186, 190–192, 194–224, 226–228, 231–235; Ex. 1009, 1:26–35, 1:53–2:3, 2:19–24, 2:33–45, 2:49–3:1, 3:18–27, 3:44–54, 3:61–67, 4:4–9, Figs. 1, 2, 4, 5, 9; Ex. 1010, 1:1–10, 1:51–55, 2:11–27, 3:20–24, Figs. 1–3; Ex. 1011, 1:58–67, Figs. 3, 5).

To summarize Petitioner’s positions, Petitioner asserts that each of Wolcott, Davidson, and Fitz-Gibbon is directed to a toothbrush with a zone within its bristles for receiving and holding a dentifrice, making each reference analogous art, and obviously and predictably combinable to provide the advantages of being able to better receive, hold, and deliver such dentifrice. *Id.* at 26–28, 49–51. Next, mapping the teachings of the prior art to the elements of claims 1, 2, 5–9, and 11–18, Petitioner asserts that the disclosed features of toothbrushes meet the elements of the claims, in particular, that the bristles of Wolcott are angled and surround a dentifrice receiving recess, that Davidson teaches a fully-recessed well for its dentifrice zone, and that the bristles of Fitz-Gibbon are even more angled around such a dentifrice holding zone than those of Wolcott to retain dentifrice inserted therein such that, when the teachings of the references are combined, they render the totality of each challenged claim obvious. *Id.* at 28–49, 51–58. As we noted above at Section I.C, the dependent claims more narrowly define aspects of the claimed toothbrush; Petitioner accounts for the added elements as taught in or suggested by the asserted prior art. *See id.* at 41–49, 56–58.

Patent Owner opposes and addresses the independent claims in view of the asserted prior art. Prelim. Resp. 6–11 (citing portions of Exs. 1009,

1010, and 1011, but submitting no supporting evidence such as declarant testimony).¹⁵

Patent Owner argues that Wolcott’s bristles are not angled, but “extend straight up.” *Id.* at 6. Patent Owner discounts the orientation of individual bristles of Wolcott’s illustrated bristle clusters, although conceding that “[t]he individual bristles within a cluster spread apart at the distal end,” per Wolcott’s Figures. *Id.* at 6–8.

Patent Owner next argues that Davidson does not teach that its dentifrice is an oral care capsule to be restrained by its bristles, but is a paste or liquid that is held only when the brush is in an upright position. *Id.* at 8–9. Patent Owner also argues Davidson’s bristles, similar to Wolcott’s, are not angled, but are perpendicular to the toothbrush head. *Id.* at 9–10.

Finally, Patent Owner argues that Fitz-Gibbon is not directed to a toothbrush that holds an oral care capsule, but to one that holds dentifrice powder, and also that its “bristles do not form angled retaining elements” because it is possible that “none of the dentifrice will even contact the bristles.” *Id.* at 10.

2. Analysis

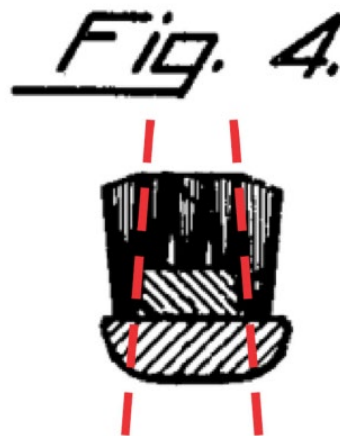
We find that, on the current record, Petitioner has sufficiently mapped the limitations of the claims to the disclosures of Wolcott, Davidson, and Fitz-Gibbon, identified a reason with rational underpinnings why the ordinarily skilled artisan would have combined the teachings of the

¹⁵ Although we note that Patent Owner submits no supporting evidence, we do so with the understanding that Patent Owner was not required to do so, as the burden here is upon, and remains with, Petitioner.

references, and identified that there would have been a reasonable expectation of success.

As an initial matter, although the burden here is Petitioner's, Patent Owner presents only attorney argument in opposition to Petitioner's challenges. "Attorneys' argument is no substitute for evidence," and here there is no evidence rebutting Petitioner's reasonable challenges, which are supported by documentary evidence and testimony from a witness whose qualifications are unchallenged and opinions substantively unrebutted. *Johnston v. IVAC Corp.*, 885 F.2d 1574, 1581 (Fed. Cir. 1989).

Regarding Patent Owner's arguments over Wolcott, we are unpersuaded. Patent Owner argues Wolcott's bristles "extend straight up," but Petitioner reasonably argues, and illustrates via an annotated version of Wolcott's Figure 4, that Wolcott discloses bristles surrounding a dentifrice receiving pocket and a dentifrice pellet, when present, that are provided at angles inclined toward that pocket and pellet. *See* Pet. 35 (citing Ex. 1008 ¶¶ 26, 142). We reproduce this annotated figure below:



The annotated Wolcott Figure 4 shows an end-cross-sectional view of the toothbrush where bristles (highlighted by red dashed lines) are angled

inwardly toward a dentifrice pellet. On this evidence, it appears that Patent Owner's argument inaccurately characterizes the prior art's disclosure as the annotated bristles clearly are not illustrated to only "extend straight up," but are angled.

Turning to Patent Owner's arguments over Davidson, we are not persuaded by the argument that Davidson's dentifrice is a liquid or paste, rather than a capsule, because Petitioner does not cite Davidson or combine it with Wolcott for its teachings of a capsule (as evidenced by Wolcott, and as admitted by the '332 patent (Ex. 1001, 1:51–52), dentifrice pellets or capsules were well known in the art). Rather, Petitioner cites Davidson for teaching that Wolcott's pellet retaining pocket or recess can be provided as a well in the head of the toothbrush, within the surrounding bristles, to increase the pellet-retaining characteristics of the device. Pet. 26–27, 32–35 (citing Ex. 1008 ¶¶ 118–121, 132–140).

Similarly, Patent Owner's argument that Davidson's bristles are not angled is also not persuasive. Petitioner does not rely on Davidson for this teaching. Pet. 35–37 (citing Ex. 1008 ¶¶ 26, 142–147). Nevertheless, Davidson's bristles surrounding its dentifrice well appear to be angled in the same fashion as Wolcott's, as illustrated by Davidson's Fig. 3. *See supra* Section II.D.2 (reproducing the figure).

Finally, regarding Patent Owner's argument that Fitz-Gibbon's toothbrush is so different from those of Wolcott and Davidson in having a rear opening for adding dentifrice making its bristles not designed to hold an oral care capsule or form angled retaining elements, we are not persuaded. On this record, we read Fitz-Gibbon to be directed to very similar subject matter as Wolcott and Davidson, i.e., a toothbrush with a region for holding

a dentifrice defined by an opening in bristles. *See* Ex. 1011, 1:18–23, Figs. 1–5. Petitioner cites Fitz-Gibbon for teaching that toothbrush bristles, particularly when defining a region for holding dentifrice, may be angled inwardly to so hold the dentifrice, which we find to be a reasonable position on the present record. *See* Pet. 49–53, 55 (citing Ex. 1008 ¶¶ 199–214, 219–222).

3. Summary

Based on the evidence presented at this stage of the proceeding, Petitioner has shown under Grounds 1 and 2 that there is reasonable likelihood that at least one of the '332 patent's claims would have been obvious over Wolcott, Davidson, and Fitz-Gibbon.

G. GROUND 3 AND 4—OBVIOUSNESS OVER YOUNG, DAVIDSON, AND FITZ-GIBBON

We find the facts and allegations under Ground 4 subsume those of Ground 3. *See* Pet. 58–92. We also find Patent Owner's positions opposing Grounds 3 and 4 substantially overlap. *See* Prelim. Resp. 10–14. For these reasons, we discuss the two grounds together.

1. Parties' Positions

Under Grounds 3 and 4, Petitioner challenges independent claims 1 and 10, and their dependent claims 2, 5–9, and 11–18 as obvious over Young and Davidson, and over these two references also combined with Fitz-Gibbon (much as Wolcott and Davidson were so-combined). Pet. 58–92 (citing, *inter alia*, Ex. 1008 ¶¶ 26, 241–250, 252–262, 264–271, 275–281, 284–288, 290–292, 295–296, 289–300, 303–304, 307–310, 313–315, 317–325, 327–328, 330–343, 345, 347–349, 352–355, 358–360; Ex. 1010, 1:1–10, 1:51–55, 2:11–27, 3:20–24, Figs. 1–3; Ex. 1011, 1:58–67, Figs. 3, 5; Ex. 1012, 1:3–9, 1:36–40, 1:50–2:4, 2:21–34, Figs. 1, 7–11).

Petitioner’s positions are basically the same as under Grounds 1 and 2, but with Young replacing Wolcott, as Young also teaches a toothbrush having angled bristles surrounding a circular pocket for retaining a dentifrice pellet. *Id.* at 58–92. Again, Petitioner maps the teachings of the prior art to the elements of claims 1, 2, 5–9, and 11–18, and asserts that the disclosed features of prior art toothbrushes meet the elements of the claims and, in particular, that the bristles of Young are angled and surround a dentifrice receiving recess, that Davidson teaches a fully-recessed well for its dentifrice zone, and that the bristles of Fitz-Gibbon are even more angled around such a dentifrice holding zone than those of Young to retain dentifrice inserted therein such that, when the teachings of the references are combined, they render the totality of each challenged claim obvious. *Id.* at 62–82, 85–92.

Patent Owner opposes and addresses the independent claims in view of the asserted prior art. Prelim. Resp. 8–14 (citing portions of Exs. 1010, 1011, and 1012, but again submitting no supporting evidence).

Patent Owner’s arguments over Davidson and Fitz-Gibbon are the same as those for Grounds 1 and 2. *See* Prelim. Resp. 8–10, 13–14. We will not review these arguments again.

Patent Owner argues Young “fails to disclose bristles being angled to receive and hold the dentifrice” because Young’s bristle “tufts [are] disposed in **parallel**, longitudinal and transverse rows.” *Id.* at 11 (citing Ex. 1012, 2:43–45). Patent Owner’s argument seeks to distinguish Young’s bristles “merely fan[ing] out from their natural spreading” from the claimed “angled to retain” element. *Id.* at 11–12.

Patent Owner argues there would have been no motivation to combine Davidson and Young because Young teaches retaining a dentifrice capsule, while Davidson teaches holding a dentifrice paste or powder, making them too different for their combination to work. *Id.* at 12–13. Patent Owner similarly argues there would have been no motivation to combine Fitz-Gibbon with Young for the same reason. *Id.* at 14.

2. Analysis

We find that, on the current record, Petitioner has sufficiently mapped the limitations of the claims to the disclosures of Young, Davidson, and Fitz-Gibbon, identified a reason with rational underpinnings why the ordinarily skilled artisan would have combined the teachings of the references, and identified that there would have been a reasonable expectation of success.

Again, “[a]ttorneys’ argument is no substitute for evidence,” and here there is no evidence rebutting Petitioner’s reasonable challenges, which are supported by evidence, including the prior art figures and witness opinion testimony. *Johnston*, 885 F.2d at 1581.

We remain unpersuaded by Patent Owner’s points regarding the disclosures of Davidson and Fitz-Gibbon for the same reasons discussed above regarding Grounds 1 and 2. Moreover, we find Petitioner’s position that the asserted prior art would have been combined with a reasonable expectation of success a reasonable one based on the very similar subject matter and objectives of the asserted art, which appear to be the same as those of the ’332 patent, too.

Regarding whether Young discloses angled bristles, we find the facts here similar to those regarding Wolcott per Grounds 1 and 2, as discussed above. Petitioner provides annotated versions of Young’s Figures 8 and 10

illustrating how, according to Petitioner's and its witness's understanding, Young's bristles are angled to retain a dentifrice pellet. We reproduce these annotated figures below:



By annotation (red dashed lines), Figures 8 and 10 highlight angled bristles surrounding a dentifrice pellet, retaining it in a pocket. *See* Pet. 69; Ex. 1008 ¶¶ 26, 266, 267. We find no error in this understanding of Young. Patent Owner's distinction between tufts of bristles and bristles appears to be misplaced, as the '332 patent describes and the claims recite bristles, not tufts. *See, e.g.*, Ex. 1001, 2:59–61, 4:64–67, 10:51–54 (“angled bristles”).

3. Summary

Based on the evidence presented at this stage of the proceeding, Petitioner has shown under Grounds 3 and 4 that there is a reasonable likelihood that at least one of the '332 patent's claims would have been obvious over Young, Davidson, and Fitz-Gibbon.

H. GROUND 5 AND 6—OBVIOUSNESS OVER SORRENTINO AND FITZ-GIBBON

Petitioner's Grounds 5 and 6 are each foundationally based on an assertion of obviousness over Sorrentino. Pet. 83–111. As discussed above, the matter of whether Sorrentino is prior art is, as yet, undetermined. *See supra* Section II.E. We have determined, as discussed above, that Petitioner

sets forth reasonable bases for unpatentability under Grounds 1–4 and we find that Petitioner satisfies its burden for the institution of trial. *See supra* Sections II.F and II.G. Therefore, we do not analyze Grounds 5 and 6 on their merits as it is unnecessary at this stage of the proceeding.

III. CONCLUSION

On the record before us at this stage in the proceeding, Petitioner has demonstrated a reasonable likelihood of showing at trial that at least one challenged claim of the '332 patent is unpatentable under at least one ground. Accordingly, we institute an *inter partes* review of the challenged claims of the '332 patent on all grounds alleged by Petitioner. This decision does not reflect a final determination on the patentability of the claims. Any arguments not pursued in Patent Owner's Response may be deemed waived.

ORDER

Accordingly, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314, an *inter partes* review of claims 1, 2, and 5–18 of the '332 patent, in accordance with each ground of challenge in the Petition, is hereby *instituted*; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '332 patent will commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

IPR2023-01254
Patent 8,881,332 B2

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