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COLGATE-PALMOLIVE COMPANY			YU, HONG	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte LIN FEI, PRAKASARAO MANDADI, and
SUMAN CHOPRA

Appeal 2020-006288
Application 15/756,146
Technology Center 1600

Before DONALD E. ADAMS, JEFFREY N. FREDMAN, and
ULRIKE W. JENKS, *Administrative Patent Judges*.

FREDMAN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal¹ under 35 U.S.C. § 134 involving claims to an anhydrous dentifrice or toothpaste. The Examiner rejected the claims as obvious. We have jurisdiction under 35 U.S.C. § 6(b). We reverse.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Colgate-Palmolive Company (*see* Appeal Br. 2). We have considered the Specification of Dec. 13, 2017 (“Spec.”); Final Action of Nov. 21, 2019 (“Final Act.”); Appeal Brief of Apr. 21, 2020 (“Appeal Br.”); Examiner’s Answer of July 6, 2020 (“Ans.”); and Reply Brief of Sept. 8, 2020 (“Reply Br.”).

Statement of the Case

Background

“Conventional oral care products . . . including whitening agents are often utilized to whiten teeth” (Spec. ¶ 1). “[P]eroxides (e.g., hydrogen peroxide) are often utilized to oxidize chromophores bound to surfaces of teeth to thereby whiten the teeth. The peroxides, however, are often unstable” (*id.*). “While non-aqueous oral care compositions, such as non-aqueous toothpastes, have proven to be effective for stabilizing the peroxides, gelling agents and/or thickeners that are compatible with propylene glycol are limited” (*id.*).

The Claims

Claims 1–15 are on appeal. Independent claim 1 is representative and reads as follows:

1. An anhydrous dentifrice or toothpaste, comprising:
an orally acceptable vehicle, the orally acceptable vehicle comprising propylene glycol;
a thickening system, the thickening system comprising a polymeric thickener, wherein the polymeric thickener is a copolymer of 2-acrylamidomethylpropanesulphonic acid or a salt thereof; and
a peroxide whitening agent.

The Issues

- A. The Examiner rejected claims 1–14 under 35 U.S.C. § 103(a) as obvious over Golding² and Joiner³ (Final Act. 3–6).
- B. The Examiner rejected claim 15 under 35 U.S.C. § 103(a) as obvious

² Golding et al., WO 2012/123241 A2, published Sept. 20, 2012.

³ Andrew Joiner and Wen Luo, *Tooth colour and whiteness: A review*, 67 J. Dentistry S3–S10 (2017).

over Golding, Joiner, and Prencipe⁴ (Final Act. 7–8).

Because the same issue is relevant to each of these rejections, we will consider these rejections together.

The issue with respect to these rejections is: Does a preponderance of the evidence of record support the Examiner’s conclusion that the combination of prior art renders the claims obvious?

Findings of Fact

1. Golding teaches:

an oral care composition suitable for delivering a temporary whitening effect to the surface of teeth, the composition comprising: a continuous phase comprising water or polyhydric alcohol or a mixture thereof; a particulate tooth surface whitening agent which is dispersed in the continuous phase, and a deposition aid for the particulate tooth surface whitening agent; characterised in that the deposition aid is a poly-(sulphonic acid) polymer . . . and in which the particulate tooth surface whitening agent is a phthalocyanine blue pigment.

(Golding 2:19–3:9).

2. Golding teaches “[t]ypical polyhydric alcohols include humectants such as . . . propylene glycol” (Golding 13:3–5).

3. Golding teaches “[s]uitable poly-(sulphonic acid) polymers of the above class may be homopolymers or copolymers of 2-acrylamido-2-methylpropane sulphonic acid” (Golding 9:16–17).

4. Joiner teaches “[t]ooth whitening products generally help to improve the overall whiteness of teeth, either by changing their intrinsic colour or by removing and controlling the formation of extrinsic stains. The former products typically use hydrogen peroxide or carbamide peroxide,

⁴ Prencipe et al., US 2008/0213730 A1, published Sept. 4, 2008.

formulated into gels and applied to the teeth” (Joiner S3, col. 2).

5. Prencipe teaches: “Peroxide releasing compounds useful in the practice of the present invention include peroxide containing compounds such as urea peroxide, sodium percarbonate, sodium perborate and PVP-H₂O₂ complexes” (Prencipe ¶ 22).

Principles of Law

A prima facie case for obviousness “requires a suggestion of all limitations in a claim,” *CFMT, Inc. v. Yieldup Int’l Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) and “a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

Analysis

The Examiner finds,

Both peroxide and blue pigment being used as tooth whitening agent was well known to a person of ordinary skill in the art at the time of the invention. The motivation for replacing the blue pigment in the composition taught by Golding et al. with H₂O₂ flows from both peroxide and blue pigment having being used in the prior art as useful for the same purpose and having been used as a tooth whitening agent in the prior art.

(Final Act. 6).

Appellant contends, “Golding teaches not merely tooth whitening, but specifically teaches the whitening of teeth *without the use of harsh chemicals or components that effect permanent whitening*” (Appeal Br. 7).

Appellant contends:

There is no chemical transformation in the Golding system as there is with peroxides, and the mechanisms of action of the two compounds are completely different. Thus, there is no

basis for the Examiner's assertion of their interchangeability, and the Examiner has not provided any evidence or reasoning why one of skill in the art would be motivated to ignore the teaching of Golding and use [the] harsh and permanent Joiner peroxide.

Id. Appellant also contends "[s]ubstitution of the blue pigment for peroxide as suggested by the Examiner would obviate the need for the copolymer, since peroxide whiteners are not dependent upon being maintained on the teeth throughout the day to achieve their effect" (*id.* at 7).

We find that Appellant has the better position. The Examiner reasons that peroxide and pigment are equivalent but we agree with Appellant that these whitening agents operate differently and are not equivalent. In particular, the pigment in Golding is deposited onto teeth to temporarily alter tooth color directly (FF 1). In contrast, peroxides as used in Joiner and Prencipe, chemically treat teeth to remove stain coloring to result in whiter teeth (FF 4).

Thus, these components are not simple substitutes but rather operate in different ways. Golding's pigment needs to remain on the teeth the entire time that a whitening effect is desired, whether that is for a single photograph, the duration of an event such as a wedding, or for several days. The peroxide of Joiner, meanwhile, may be removed after it chemically reacts with stains in teeth resulting in whiter teeth. The Examiner provides no persuasive reason why the other components of claim 1 or Golding, added to result in retention of pigment on teeth, would provide any benefit or improvement on the chemical tooth whitening effect of the peroxide compounds used by Joiner and Prencipe. In the absence of such a reason, we reverse these obviousness rejections.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–14	103	Golding, Joiner		1–14
15	103	Golding, Joiner, Prencipe		15
Overall Outcome				1–15

REVERSED