



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/866,780	08/09/2010	Michael Prencipe	8572-00-OC	4442
23909	7590	11/02/2016	EXAMINER	
COLGATE-PALMOLIVE COMPANY			PEEBLES, KATHERINE	
909 RIVER ROAD			ART UNIT	
PISCATAWAY, NJ 08855			PAPER NUMBER	
			1617	
			NOTIFICATION DATE	
			DELIVERY MODE	
			11/02/2016	
			ELECTRONIC	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Patent_Mail@colpal.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MICHAEL PRENCIPE, RICHARD SCOTT ROBINSON,
RAJNISH KOHLI, and RICHARD J. SULLIVAN¹

Appeal 2015-001487
Application 12/866,780
Technology Center 1600

Before JEFFREY N. FREDMAN, TAWEN CHANG, and
DEVON ZASTROW NEWMAN, *Administrative Patent Judges*.

NEWMAN, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal under 35 U.S.C. § 134 involves claims to a dental whitening agent. The Examiner entered final rejections for obviousness. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part.

STATEMENT OF THE CASE

Background

The Specification discloses:

¹ Appellants identify the Real Party in Interest as Colgate-Palmolive Company. App. Br. 2.

The present invention is directed to compositions and devices which deliver basic amino acids, e.g., arginine, to the oral cavity together with a whitening agent to whiten teeth and, e.g., (i) reduce or inhibit formation of dental caries, (ii) reduce, repair or inhibit pre-carious lesions of the enamel, e.g., as detected by quantitative light-induced fluorescence (QLF) or electrical caries measurement (ECM), (iii) reduce or inhibit demineralization and promote remineralization of the teeth, (iv) reduce hypersensitivity of the teeth, (v) reduce or inhibit gingivitis, (vi) promote healing of sores or cuts in the mouth, (vii) reduce levels of acid producing bacteria, (viii) to increase relative levels of arginolytic bacteria, (ix) inhibit microbial biofilm formation in the oral cavity. (x) raise and/or maintain plaque pH at levels of at least pH 5.5 following sugar challenge, (xi) reduce plaque accumulation, (xii) clean the teeth and oral cavity, (xiii) immunize the teeth against cariogenic bacteria, (xiv) promote systemic health, including cardiovascular health, e.g., by reducing potential for systemic infection via the oral tissues, (xv) reduce erosion and/or (xv) treat, relieve or reduce dry mouth.

Spec. ¶ 5.

Arginine and other basic amino acids have been proposed for use in oral care and are believed to have significant benefits in combating cavity formation and tooth sensitivity. It is believed that basic amino acids in the oral cavity are metabolized by certain types of bacteria . . . [leading to] demineraliz[ation of] the teeth, ultimately leading to cavities. Basic amino acids, e.g., arginine, moreover promote remineralization of the teeth, helping to repair erosion, and plugging microtubules implicated in dentinal sensitivity. Many patients complain of hypersensitive teeth following bleaching treatments, possibly because the whitening chemicals irritate the nerve endings in the microtubules.

Id. at ¶ 6.

The Issues

The following rejections are before us to review (App. Br. 3–4).

- A. Claims 1, 7, 9, 10, 13, 19–21, 23–25, 27, 29, 31–34, and 38–40 are rejected as obvious under 35 U.S.C. § 103(a) over Sharma,² van Lune,³ and Kleinberg '504.⁴
- B. Claims 1, 7, 9, 10, 13, 19–21, 23–25, 27, 29, 31–34, and 38–40 are rejected as obvious under 35 U.S.C. § 103(a) over Chen⁵ and Kleinberg '504.
- C. Claim 8 is rejected as obvious under 35 U.S.C. § 103(a) over Chen, Kleinberg '504, and Dewis.⁶
- D. Claim 22 is rejected as obvious under 35 U.S.C. § 103(a) over Chen, Kleinberg '504, and Kleinberg '813.⁷
- E. Claim 26 is rejected as obvious under 35 U.S.C. § 103(a) by Chen, Kleinberg '504, and Chadwick.⁸

² Deepak Sharma and Jenette Suh Edelstein, US 2007/0231276 A1, published Oc. 4, 2007 (“Sharma”)

³ Harry van Lune and Johan Jochem Bruggeman, EP 1 724 359 A1, published Nov. 22, 2006 (“van Lune”)

⁴ Israel Kleinberg, et al., US 2002/0064504 A1, published May 30, 2002 (“Kleinberg '504”)

⁵ Tianming Chen, U.S. Pat. No. 6,500,408 B2, issued Dec. 31, 2002 (“Chen”)

⁶ Mark L. Dewis, et al., US 2006/0057268 A1, published Mar. 16, 2006 (“Dewis”)

⁷ Israel Kleinberg, U.S. Pat. No. 4,154,813, issued May 15, 1979 (“Kleinberg '813”)

⁸ Thomas C. Chadwick and Heather L. Hunt, US 2003/0170592 A1, published Sept. 11, 2003 (“Chadwick”).

F. Claim 30 is rejected as obvious under 35 U.S.C. § 103(a) by Chen, Kleinberg '504 and Witt.

Claim 1 illustrates the appealed subject matter and reads as follows:

1. A composition comprising an effective amount of a dental whitening agent, and from about 0.1 % to about 50% by weight of arginine in salt form; and the composition further comprising a matrix material wherein the dental whitening agent and arginine are dispersed within said matrix material.

App. Br. Appx. 18.

OBVIOUSNESS

Rejection over Sharma, van Lune, and Kleinberg '504

Does the preponderance of evidence of record support the Examiner's finding that Sharma, van Lune, and Kleinberg '504 suggest the invention of claims 1, 7, 9, 10, 13, 19–21, 23–25, 27, 29, 31–34, and 38–40?

FACTUAL FINDINGS (FF)

FF 1. Sharma discloses:

At least one zwitterionic stabilizer is added to the compositions of the present invention to provide improved physical and/or chemical stability to the composition compared to a similar composition that does not contain the zwitterionic stabilizer. While not intending to be limited by the following, in aqueous solutions at pH of between about 4.5 to about 7.5, certain molecules or compounds possess zwitterionic properties and possess functional groups that can act as a proton donor as well as an acceptor in hydrogen bonding interactions.

Sharma, ¶ 10.

FF 2. Sharma discloses

The pH of dental whitening compositions is typically adjusted with strong bases, such as sodium hydroxide, potassium hydroxide, and the like. The final pH is typically from about 4 to about 7. With the compositions of the present invention, in addition to stabilizing the composition, the zwitterionic stabilizing compound may also serve as a buffering agent and help maintain pH under chemical stress.

Id. at ¶ 14.

FF 3.

Kleinberg '504 discloses:

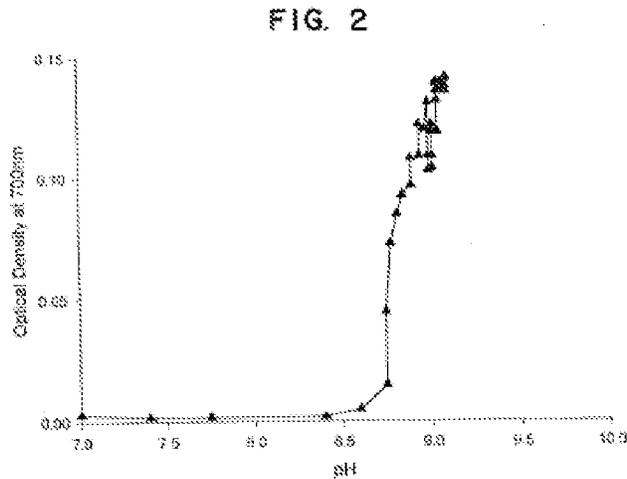
[T]he present invention relates to a method of reducing or preventing tooth hypersensitivity by delivering into the oral cavity an oral composition containing a therapeutically effective amount of arginine bicarbonate and calcium carbonate distributed in an oral vehicle. The amount of arginine bicarbonate and calcium carbonate sufficient to reduce or prevent dentinal hypersensitivity is an amount sufficient to promote dentinal plugging. It has been discovered that arginine bicarbonate and calcium carbonate promote the formation of and provide particles in the oral cavity for plugging the dentinal tubules of teeth. By plugging the dentinal tubules, the oral compositions used in the method of this invention are capable of reducing dentinal hypersensitivity. A mixture of arginine bicarbonate, which is highly soluble, with poorly soluble calcium carbonate (or calcium phosphate) yields a composition that gives a pH of about 8.0 to 9.0, which is ideal for tubule plugging.

Kleinberg ¶ 31.

FF 4. Kleinberg '504 discloses “[a]rginine bicarbonate [is] well suited for promoting dentinal plugging for a number of reasons . . .

arginine bicarbonate surprising has adhesive properties particularly useful at a pH ranging from about 7.5 to about 9.5, and preferably 8 to about 9 or 9.5.” *Id.* at ¶¶ 31 and 34.

FF 5. Kleinberg ’504 Figure 2 demonstrates that very little aggregate formation (*i.e.*, dental plug formation) occurs at a pH of less than 8.5 in a solution of arginine bicarbonate/calcium carbonate mixture.



Id. at Fig. 2.

ANALYSIS

The Examiner finds that Sharma discloses a “dental whitening composition comprising a dental whitening agent and a zwitterionic stabilizer” – preferably amino acids such as arginine – to promote whitening efficacy. Fin. Act. 8.⁹ The Examiner finds Kleinberg ’504 discloses “use of arginine bicarbonate [] or alternatively arginine phosphate [] to promote calcification of dental caries and thus reduce tooth hypersensitivity and pain.” *Id.*

⁹ Final Office Action, mailed February 28, 2014.

Based on the teachings of the references, the Examiner concludes it would have been obvious to one of ordinary skill to

add the specific arginine salts disclosed by Kleinberg et al. to the dental whitening composition disclosed by Sharma et al. because Sharma et al. disclose adding other agents that provide the benefit of reduced tooth sensitivity to their composition [] and Kleinberg has disclosed that these salts are particularly efficacious in reducing dental sensitivity.

Id. at 8–9. The Examiner further finds the ordinary artisan would have added the arginine salts at the concentration disclosed by Sharma for the desensitizing agent and “to adjust the pH of the composition arrived at by combining the teachings of Sharma & Kleinberg as discussed to fall within about 7.5 to about 9.5.” *Id.* at 10–11.

As stated in *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992):

[T]he examiner bears the initial burden . . . of presenting a *prima facie* case of unpatentability. . . .

After evidence or argument is submitted by the applicant in response, patentability is determined on the totality of the record, by a preponderance of evidence with due consideration to persuasiveness of argument.

We select claim 1 as representative of the claims subject to this ground of rejection. 37 C.F.R. § 41.37(c)(iv).

Appellants argue, *inter alia*, that “[b]oth Sharma and Kleinberg ’504 teach inventions that are highly dependent on controlling pH, and furthermore, that the effective pH ranges of these two inventions are inconsistent with each other.” Reply Br. at 3. Appellants note Sharma teaches the favorable zwitterionic effect that helps stabilize their whitening compositions occurs “in aqueous solutions at pH of between about 4.5 to about 7.5” and that Sharma’s teaching that the zwitterionic stabilizing

compound “may also serve as a buffering agent and help maintain pH under chemical stress” indicates “this pH range is important enough that there be a buffering effect to prevent deviation of the composition from this range.”

Id. Appellants argue “Kleinberg ’504 expressly teaches that ‘For intrinsic plugging and the formation of salivary precipitin, a pH between 8 and 9 is preferred.’” *Id.* Appellants further argue Kleinberg’s Figure 2 demonstrates that virtually no aggregate formation (i.e., dental plug formation) occurs at a pH of less than 8.5 in a solution of arginine bicarbonate/calcium carbonate mixture. *Id.*, citing Kleinberg Fig. 2 and ¶ 54. According to Appellants, the operative pH ranges of Sharma and Kleinberg are inconsistent and one skilled in the art could not combine the teachings of these two references in a manner that achieves the results of both inventions. *Id.* at 3–4.

We are persuaded that Appellants have the better position. Kleinberg and Sharma teach use of pH ranges that are not compatible with each other; primarily, the arginine bicarbonate taught by Kleinberg would not be effective to reduce hypersensitivity in the pH range at which Sharma operates (FF 1–5) and Appellants persuade us that one of skill in the art would not reasonably succeed in applying the teachings of Kleinberg with Sharma to create the claimed composition. Accordingly, we reverse this rejection.

Conclusion of Law

A preponderance of the evidence of record does not support the Examiner’s finding that Sharma, van Lune, and Kleinberg ’504 suggest the invention of claims 1, 7, 9, 10, 13, 19–21, 23–25, 27, 29, 31–34, and 38–40.

Rejection over Chen and Kleinberg ’504

Does the preponderance of evidence of record support the Examiner's finding that Chen, and Kleinberg '504 suggest the invention of claims 1, 7, 9, 10, 13, 19–21, 23–25, 27, 29, 31–34, and 38–40?

FACTUAL FINDINGS

FF 6. Chen discloses “[a] dental bleach that includes a bleaching agent and a thickening agent. The bleaching agent is typically a peroxide and the thickening agent is polyvinylpyrrolidone. A viscous or sticky dental bleach results.” Chen Abstract.

FF 7. Chen discloses:

Even when they have not been exposed to caustic prior art dental bleaches, some patients experience chronic sensitivity of the teeth and gums. This sensitivity may be alleviated in part by including a desensitizing agent in the dental bleach so that the patient will not experience discomfort or develop apprehension during the bleaching process. Examples of desensitizing agents include fluoride, potassium nitrate, sodium citrate, aloe vera and the like. *Id.* at 8:46–54.

FF 8. Chen discloses “[p]referably the pH ranges of the mixed gel will be in the range of 5 to 8, and more preferably in the range of 4 to 10. Other pH ranges are possible.” *Id.* at 11:18–20.

ANALYSIS

The Examiner finds:

A person of ordinary skill in the art would have been motivated to add the specific arginine salts disclosed by Kleinberg et al. to the dental bleaching composition disclosed by Chen because Chen discloses adding other agents that provide the benefit of reduced tooth sensitivity to their composition [] and also disclose adding agents that can treat dental caries []. Kleinberg has disclosed that these salts are particularly efficacious in reducing dental sensitivity and dental caries. While Chen discloses inclusion of potassium nitrate as a desensitizing agent

[], a person of ordinary skill in the art would have been motivated to also include one of the arginine salts disclosed by Kleinberg et al. because these salts are effective at both treating dental caries and reducing tooth sensitivity.

Fin. Act. 14.

The Examiner finds the pH ranges suitable for Kleinberg '504 and Chen overlap and that one of skill in the art could routinely optimize the pH of a combined composition. Ans. 8–9.

We select claim 1 as representative of the claims subject to this ground of rejection. 37 C.F.R. § 41.37(c)(iv).

Appellants argue Kleinberg “would not be significantly operative at a pH below 8.5” and that “one skilled in the art would clearly view the practical effective pH range of the Kleinberg invention as at least pH 8.5 to 9.5.” App. Br. 4–5. According to Appellants, Kleinberg’s Figures 1–4 “teach away from formulating an anti-hypersensitivity composition below pH 8.5,” meaning one of skill in the art would not be motivated to combine the references. Reply Br. 5.

We find the Examiner has the better position. Chen discloses a range of mixed gel compositions with a pH “more preferably in the range of 4 to 10.” FF 8. Accordingly, the teachings of Chen are well suited for combination with the pH range taught in Kleinberg '504 to be most effective, as noted by Appellants. FF 3–5. “A prima facie case of obviousness typically exists when the ranges of a claimed composition overlap the ranges disclosed in the prior art.” *In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003). As Appellants have provided no other argument or evidence in favor of reversal, we affirm the rejection of obviousness.

Conclusion of Law

A preponderance of the evidence of record supports the Examiner's finding that Chen, and Kleinberg '504 suggest the invention of claim 1.

Claims 7, 9, 10, 13, 19–21, 23–25, 27, 29, 31–34, and 38–40 have not been argued separately and therefore fall with claim 1. 37 C.F.R. § 41.37(c)(1)(iv).

Rejection over Chen, Kleinberg '504 and Dewis

Does the preponderance of evidence of record support the Examiner's finding that Chen, Kleinberg '504, and Dewis suggest the invention of claim 8?

FACTUAL FINDINGS

FF 9. Dewis discloses:

The present invention relates to novel compounds and a process for augmenting or imparting a flavor enhancement effect or modifying the perception of one or more of the five basic taste qualities sweet, sour, salt, bitter and umami, to a . . . toothpaste . . . comprising the step of adding to a . . . toothpaste . . . a flavor enhancement or modification of basic taste quality augmenting, enhancing or imparting quantity and concentration of at least one [claimed composition].

Dewis ¶ 11.

FF 10. Dewis discloses “[i]n addition, the compounds of the present invention may also be employed to enhance the perceived salt taste of known salty tasting compounds which may be used as salt substitutes . . . Specific examples of these compounds are arginine hydrochloride . . .” *Id.* at ¶ 63.

ANALYSIS

The Examiner finds that, based on Dewis' teachings that "arginine hydrochloride can be used to enhance salty taste," one of skill in the art "would have been motivated to add arginine hydrochloride to enhance the flavor of the composition disclosed by Chen in light of Chen's disclosure that flavoring agents may be added." Fin. Act. 18–19.

Appellants argue that Dewis is not analogous art because it is not "reasonably pertinent to the instant invention" or "to Chen" because it is not concerned with the "particular problem" facing Chen, namely ". . . a need for dental bleach and a method for its use that includes a thickener or gelling agent that does not attack or react with tooth enamel." App. Br. 5–6. According to Appellants, "the presence or absence of a flavoring agent in the Chen composition has no bearing whatsoever on its ability to solve the stated problem" and "[o]ne skilled in the art seeking to solve the same problem, however, would not be lead to a reference concerned solely with the enhancement of flavor, as flavor clearly has no bearing on the problem faced by the Appellants' invention." *Id.* at 6. Appellants further argue the flavoring agents taught by Dewis would not be considered a "result effective variable" for solving the problem of mitigating sensitivity or fall within the scope of Chen's recital of flavorings. *Id.* at 6–7.

We are not persuaded. "In determining whether obviousness is established by combining the teachings of the prior art, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art." *In re GPAC Inc.*, 57 F.3d 1573, 1581 (Fed. Cir. 1995) (internal quotations omitted). Dewis teaches that arginine hydrochloride can be used to enhance salty taste. FF 10. Dewis further teaches that compounds of the invention can be used to substitute for

compounds such as arginine hydrochloride, to “enhance the perceived salt taste” and that such compounds are suitable for use in *e.g.*, toothpaste. FF 9–10. Accordingly, the use of arginine hydrochloride in a dental solution as a flavoring (or the substitutes taught by Dewis) is obvious over the cited references. That arginine hydrochloride has other benefits within the composition does not otherwise render the combination patentable as mere recognition of latent properties in the prior art does not render nonobvious an otherwise known invention. *In re Prindle*, 297 F.2d 251, 254 (CCPA 1962) (suppressive effect of prior art bags plasticized with DEHP on hemolysis, which effect was previously unknown, found insufficient to rebut a *prima facie* finding of obviousness). Accordingly, we affirm the rejection of obviousness.

Conclusion of Law

A preponderance of the evidence of record supports the Examiner’s finding that Chen, Kleinberg ’504, and Dewis suggest the invention of claim 8.

Rejection over Chen, Kleinberg ’504 and Kleinberg ’813

Does the preponderance of evidence of record support the Examiner’s finding that Chen, Kleinberg ’504, and Kleinberg ’813 suggest the invention of claim 22?

ANALYSIS

The Examiner cites Kleinberg ’813 for the teaching that dental caries occur when dental compositions reach a pH of below 6.1 (Fin. Act. 19) and finds one of skill in the art would have combined its teachings with those of

Chen on dental bleaching compositions formulated with Carbopol™ to increase viscosity, thereby arriving at the composition of claim 22. *Id.* at 20. The Examiner concludes the artisan “would have been motivated to adjust the pH of any dental whitening composition containing carbopol to 6.1 because this is the minimum pH that a dental composition can have without promoting the formation of dental caries.” *Id.*

Appellants reiterate their earlier argument that one of skill in the art would not be led by the teachings of Kleinberg ’504 to use a pH of less than 8 due to the absence of the desired dentinal blocking effect of an arginine bicarbonate/calcium carbonate mixture at that pH. App. Br. 7. Here as well Appellants persuade us that one of skill in the art would not reasonably succeed in applying the teachings of Kleinberg with Chen and Kleinberg ’813 to create the claimed composition at a pH of 6.1 due to the inconsistent teachings of these references (*see* FF 3–5). Accordingly, we reverse this rejection.

Conclusion of Law

A preponderance of the evidence of record does not support the Examiner’s finding that Chen, Kleinberg ’504, and Kleinberg ’813 suggest the invention of claim 22.

Rejection over Chen, Kleinberg ’504 and Chadwick

Does the preponderance of evidence of record support the Examiner’s finding that Chen, Kleinberg ’504, and Chadwick suggest the invention of claim 26?

FACTUAL FINDINGS

FF 11. Chadwick discloses an aqueous gel composition useful for bleaching teeth. Chadwick, Abstract.

FF 12. Chadwick discloses that in addition to the primary components, “a neutralizing agent may be added to the aqueous gel” and its use “is preferred since it serves to further thicken the system.” *Id.* at ¶ 35.

FF 13. Chadwick discloses that “[a]mino acids such as . . . lysine can also be used for neutralization and viscosity modification.” *Id.* at ¶ 36.

ANALYSIS

The Examiner finds it would have been obvious for one of skill in the art to have relied on the teachings of Chadwick, which teach use of lysine as a neutralizing agent and viscosity modifier in aqueous gel dental bleaching compositions, in addition to those of Chen and Kleinberg ’504 to achieve the composition of claim 30. Fin. Act. 20–21.

Appellants argue that the rejection relies upon one skilled in the art “having already combined the teachings of Chen and Kleinberg ’504 to reach an arginine-containing whitening composition, to which lysine is then added to achieve greater thickening.” App. Br. 15. According to Appellants, because arginine is a base, there would be no reason to add it to the Chen/Kleinberg ’504 composition to further thicken the composition. *Id.* Appellants further argue the skilled artisan would not be motivated to add lysine to the composition of claim 1, which is not a claim element of that claim. *Id.* at 16.

We are not persuaded that the Examiner erred in rejecting claim 30 over Chen, Kleinberg ’504 and Chadwick. We have addressed the combination of Chen and Kleinberg ’504 above. Chadwick is analogous art, and the Examiner states a strong prima facie case of obviousness.

Appellants provide no evidence in support of their argument. Without evidence, the attorney argument is unpersuasive. *See In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974) (“Attorney’s argument in a brief cannot take the place of evidence.”). Accordingly, we affirm this rejection.

Conclusion of Law

A preponderance of the evidence of record supports the Examiner’s finding that Chen, Kleinberg ’504, and Chadwick suggest the invention of claim 26.

Rejection over Chen, Kleinberg ’504 and Witt

Does the preponderance of evidence of record support the Examiner’s finding that Chen, Kleinberg ’504, and Witt suggest the invention of claim 30?

FACTUAL FINDINGS

FF 14. Witt discloses oral care compositions for avoiding dental disease and/or teeth whitening. Witt, Abstract.

FF 15. Witt discloses use of antimicrobial antiplaque agents in oral care compositions. *Id.* at ¶ 119.

ANALYSIS

The Examiner finds that the teachings of Witt regarding inclusion of antimicrobial agents in dental care compositions would render obvious to one of skill in the art, when combined with the teachings of Chen and Kleinberg ’504, the composition of claim 30 and that the ordinarily skilled artisan would have been motivated to make the combination to reduce

plaque. Fin. Act. 21–22. Appellants argue the problem addressed by Witt is “how to deliver an effective amount of chlorite ion to the oral cavity while not generating a significant quantity of the unpleasant chlorine dioxide and chlorous acid by-product,” which differs from the issue addressed by Appellants’ invention. App. Br. 16. According to Appellants, one of skill in the art would not be motivated to rely on Witt’s teachings because it is “so tangentially related” to the problem being solved. *Id.* at 16–17.

We are not persuaded that the Examiner erred in rejecting claim 30 over Chen, Kleinberg ’504 and Witt. These references are analogous art, and the Examiner states a strong prima facie case of obviousness. Again, Appellants provide no evidence in support of their argument. Without evidence, the attorney argument is unpersuasive. *In re Pearson*, 494 F.2d at 1405. Accordingly, we affirm this rejection.

Conclusion of Law

A preponderance of the evidence of record supports the Examiner’s finding that Chen, Kleinberg ’504, and Witt suggest the invention of claim 30.

SUMMARY

We reverse the rejection of claims 1, 7, 9, 10, 13, 19–21, 23–25, 27, 29, 31–34 and 38–40 as obvious under 35 U.S.C. § 103(a) over Sharma, van Lune, and Kleinberg ’504.

We affirm the rejection of claims 1, 7, 9, 10, 13, 19–21, 23–25, 27, 29, 31–34, and 38–40 as obvious under 35 U.S.C. § 103(a) over Chen and Kleinberg ’504.

Appeal 2015-001487
Application 12/866,780

We affirm the rejection of claim 8 as obvious under 35 U.S.C. § 103(a) over Chen, Kleinberg '504, and Dewis.

We reverse the rejection of claim 22 as obvious under 35 U.S.C. § 103(a) over Chen, Kleinberg '504, and Kleinberg '813.

We affirm the rejection of claim 26 as obvious under 35 U.S.C. § 103(a) by Chen, Kleinberg '504, and Chadwick.

We affirm the rejection of claim 30 as obvious under 35 U.S.C. § 103(a) by Chen, Kleinberg '504 and Witt.

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED-IN-PART