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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte LINH FRUGE, STEVEN WADE FISCHER,
and MICHAEL PRENCIPE.¹

Appeal 2015-005978
Application 13/503,801
Technology Center 1600

Before DONALD E. ADAMS, TAWEN CHANG and
JOHN E. SCHNEIDER, *Administrative Patent Judges*.

SCHNEIDER, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134(a) involving claims to dentifrice compositions which have been rejected as obvious. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

STATEMENT OF THE CASE

The present invention is directed to “dentifrice compositions having a low water phase comprising effective amounts of polyphosphate and ionic

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

active ingredients. The ionic active ingredients may include fluoride ions and metal ions such as stannous and zinc ion source.” Spec. ¶ 1.

Claims 1, 4, and 5–19 are on appeal. Claim 1 is illustrative and reads as follows:

1. A dentifrice composition comprising in a single phase:
 - an orally acceptable vehicle;
 - a source of fluoride ions;
 - a source of stannous ions;
 - a source of zinc ions; and
 - at least one polyphosphate salt selected from the group consisting of inorganic polyphosphate salts which have equal to or less than three phosphorous atoms;wherein
 - the dentifrice composition has a total water content of less than about 10% based on the weight of the composition;
 - and
 - the vehicle comprises a thickening agent comprising, in combination, a cross-linked polyvinylpyrrolidone and a gum.

The claims stand rejected as follows:

Claims 1, 4, 5, and 8–19 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Glandorf² in view of Miller³.

Claims 6 and 7 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Glandorf in view of Miller in further view of Trivedi.⁴

² Glandorf et al., US 2007/025928 A1, published Feb. 1, 2007 (“Glandorf”).

³ Miller et al., US 2007/0014740 A1, published Jan. 18, 2007 (“Miller”).

⁴ Trivedi et al., US 2006/0134025 A1, published June 22, 2006 (“Trivedi”).

DISCUSSION

Issue

In rejecting claims 1 and 4–19⁵ as obvious, the Examiner finds that Glandorf teaches all the elements of the claims with the exception of the use of crosslinked polyvinyl pyrrolidone (“PVP”). Final Act. 3. The Examiner goes on to find that Miller teaches the use of crosslinked PVP as a thickener for oral compositions. Final Act. 4. The Examiner concludes that it would have been obvious to one skilled in the art to use cross-linked PVP taught in Miller in the composition of Glandorf. *Id.*

Appellants contend that Glandorf fails to teach a combination of PVP and xanthan gum and that the examples of Glandorf are primarily directed to water levels in excess of those set forth in the instant claims. Appeal Br. 5. Appellants go on to argue that Miller does not teach using crosslinked PVP in combination with xanthan gum as a thickener and that there is no suggestion to combine the teachings of Miller with those of Glandorf. *Id.* Appellants conclude by arguing that there is strong evidence of secondary considerations, namely a teaching away and unexpected results. *Id.* at 5–6.

The issue with respect to this rejection is whether the Examiner has established by a preponderance of the evidence that claims 1 and 4–19 would have been obvious over Glandorf combined with Miller as defined by 35 U.S.C. § 103(a).

⁵ While claims 6 and 7 are the subject of a separate rejection, Appellants concede that these claims stand or fall with the rejection of claims 1, 4, 5, and 8–19. Appeal Br. 2–3. Therefore we shall address all the rejected claims together.

Findings of Fact

We adopt as our own the Examiner's findings and analysis. The following findings are included for emphasis and reference convenience.

FF1. Glandorf teaches a low water dentifrice composition comprising stannous fluoride, sodium polyphosphate, zinc lactate, glycerin, carrageenan and xanthan gum. Glandorf, Example II, formula D.

FF2. Glandorf identifies carrageenan and xanthan gum as thickeners. Glandorf ¶ 74.

FF3 Miller discloses an oral composition containing cationic compatible thickeners including crosslinked PVP. Miller ¶ 52.

FF4. Miller discloses that the oral composition can contain other thickeners such as xanthan gum in addition to crosslinked PVP. *Id.*

Principles of Law

“The factual predicates underlying an obviousness determination include the scope and content of the prior art, the differences between the prior art and the claimed invention, and the level of ordinary skill in the art.” *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998).

It is obvious to those skilled in the art to substitute one known equivalent for another. *See In re Omeprazole Patent Litigation*, 483 F.3d 1364, 1374 (Fed. Cir. 2007) (“[T]his court finds no . . . error in [the] conclusion that it would have been obvious to one skilled in the art to substitute one ARC [alkaline reactive compound] for another.”).

“Although a reference that teaches away is a significant factor to be considered in determining unobviousness, the nature of the teaching is

highly relevant, and must be weighed in substance. A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use.” *In re Gurley*, 27 F.3d 551,553 (Fed. Cir. 1994).

“The evidence presented to rebut a *prima facie* case of obviousness must be commensurate in scope with the claims to which it pertains.” *In re Dill*, 604 F.2d 1356, 1361 (CCPA 1979).

Analysis

Claim 1 is representative of the rejected claims and related to a dentifrice which includes crosslinked PVP as a thickener.

We agree with the Examiner that that subject matter of claim 1 would have been obvious to one skilled in the art at the time the invention was made. Glandorf teaches all of the claim limitations except the use of crosslinked PVP as a thickener. FF1. Miller teaches the use of crosslinked PVP as a thickener. FF3. It would have been obvious to one skilled in the art to use crosslinked PVP as a thickener in the composition of Glandorf as it would involve substituting one known thickener for another.

Appellants contend that Glandorf does not teach the use of PVP with xanthan gum. Appeal Br. 5. While this may be true, Glandorf does teach the use of two thickeners, carrageenan and xanthan gum, in a water free composition. FF1 and 2. Miller teaches that crosslinked PVP and xanthan gum can be used together as thickeners. FF3 and 4. It would have been obvious to one skilled in the art to substitute the crosslinked PVP/xanthan gum mixture of Miller for the carrageenan/xanthan gum combination disclosed in Glandorf.

Appellants argue that, while Glandorf teaches a composition containing PVP as a chelating agent, crosslinked PVP and PVP are not interchangeable. Reply Br. 2–3. While this may be true, we are not persuaded that the instant claims are thereby rendered unobvious. As discussed above, both Glandorf and Miller teach the use of a mixture of two thickeners, and Miller teaches crosslinked PVP as a thickener. FF2–4. It would have been obvious to one skilled in the art to substitute one known thickener mixture for another.

Appellants argue that Miller does not teach the reason for adding crosslinked PVP as a thickener in combination with xanthan gum. Appeal Br. 5. We are unpersuaded. Miller specifically teaches that crosslinked PVP can be used with xanthan gum. FF4. With respect to Miller not teaching minimizing viscosity, we note that viscosity is not a claim limitation.

Appellants next argue that the art teaches away from the proposed combination. Appeal Br. 5–6. Again we are unpersuaded. While the Specification discussed some of the apparent disadvantages of the prior art, Appellants have pointed to no persuasive evidence that the art teaches against the proposed combination. At best Appellants have shown that certain compositions may be considered inferior alternatives. This does not constitute a teaching away. *In re Gurley*, 27 F.3d at 553.

Finally, Appellants argue that the compositions of the claimed invention exhibit unexpected results when compared with the prior art. Once again, we are unpersuaded. Appellants only present data for a single formulation that uses crosslinked PVP and xanthan gum. However, claim 1

refers to gum broadly, not just xanthan gum. Thus the evidence of unexpected results is not commensurate with the scope of the claims.

Conclusion of Law

We conclude that the subject matter of claim 1 would have been obvious over Glandorf in combination Miller under 35 U.S.C. § 103(a).

Claims 4–19 have not been argued separately and therefore fall with claim 1. 37 C.F.R. § 41.37(c)(1)(iv).

SUMMARY

We affirm the rejections based on 35 U.S.C. § 103(a).

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