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# ***PTAB Reverses Obviousness Rejection and Affirms Double-Patenting Rejection with Terminal Disclaimer***

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Colgate-Palmolive Co. appealed the Examiner's rejection of U.S. Application No. 15/539,725 (filed June 26, 2017) as indefinite under 35 U.S.C. §112(b) and obvious under §103 in light of U.S. Application No. 2007/0025928 A1 (published February 1, 2007), "Glandorf." The PTAB reversed the Examiner's rejections under §112(b) and several of the Examiner's rejections based on the Glandorf reference but affirmed an obviousness-type double patenting rejection over U.S. Patent No. 10,350,151 B2 (issued July 16, 2019) to Qiao in view of Glandorf. The Board quickly dispatched the Examiner's indefiniteness rejection based on the claims' express limitation that the complex must have a 20:1 phosphorous to zinc mole ratio before focusing on the obviousness rejections.

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## **Obviousness Rejection**

The '725 Application is directed towards "a soluble zinc polyphosphate complex for use in personal care compositions and methods of making the complex." Claim 1 recites:

1. An oral care composition, comprising:

a soluble zinc polyphosphate complex, made by combining zinc citrate and sodium hexametaphosphate, and water;

wherein the relative amounts of zinc citrate and sodium hexametaphosphate produce the soluble zinc polyphosphate complex with a phosphorous to zinc mole ratio of 20:1.

Glandorf's abstract discloses "oral compositions comprising a stannous ion source, a polyvalent cation source and a mineral surface active agent [(MSA)]," wherein "[t]he mineral surface active agents are agents that are substantive to mineral surfaces such as teeth and have chelating activity for polyvalent cations including . . . zinc (Zn+2)" and preferably "include polymers or copolymers containing phosphate, phosphonate, or carboxy groups." Glandorf also discloses preferred embodiments where the MSA includes zinc and copolymers which contain phosphates, phosphonates, or carboxy groups. Glandorf also discloses preferred polyvalent cations that include zinc citrate.

Specifically, the Board focused on the following portion in Glandorf:

A preferred polymeric MSA is a polyphosphate. A polyphosphate is generally understood to consist of two or more phosphate molecules arranged primarily in a linear configuration, although some cyclic derivatives may be present. Particularly effective are polyphosphates having an average chain length of about four or more phosphate groups so that surface adsorption at effective concentrations produces

sufficient non-bound phosphate functions which enhance the anionic surface charge as well as hydrophilic character of the surfaces. . . . The *longer-chain polyphosphate salts include* tetrapolyphosphate and hexametaphosphate, among others. *Polyphosphates larger than tetrapolyphosphate usually occur as amorphous glassy materials. Examples of suitable polyphosphates are the linear “glassy” polyphosphates having the formula:*



wherein X is sodium, . . . and *n averages from about 6 to about 125*. Preferred are polyphosphates manufactured by FMC Corporation which are commercially known as Sodaphos ( $n \approx 6$ ), Hexaphos ( $n \approx 13$ ), and Glass H ( $n \approx 21$ ). The most preferred polyphosphate is Glass H. These polyphosphates may be used alone or in a combination thereof.

and whether this disclosure made the claimed 20:1 phosphorus to zinc mole ratio obvious.

The Examiner argued that “the amounts [of zinc citrate and sodium hexametaphosphate] required [to produce the complex of Appellant’s claim 1] are not claimed and the details of the process are not claimed, [therefore,] one of skill in the art can draw no conclusions regarding whether the process actually forms a complex having a phosphorous to zinc mole ratio of 20:1.” The Examiner also argued that because Glandorf discloses a range of mole ratios from “about 6 to 125” which overlaps with the claimed 20:1 ratio, a *prima facie* case for obviousness existed.

The Board agreed with the Appellant’s arguments that (a) the complex is required to have both a 20:1 phosphorous to zinc mole ratio and be water soluble; and (b) the relevant passage in Glandorf did not teach or suggest that it is possible to form such a zinc polyphosphate complex. The Board stated that simply pointing out a disclosed overlapping range “fails to make obvious Appellant’s claimed phosphorous to zinc mole ratio.” The Board also found that the “about 6 to 125” mole ratio of Glandorf’s Glass H did not teach or suggest the claimed 20:1 mole ratio or that the 20:1 ratio would form a complex. Notably, the Board stated:

We appreciate Examiner’s finding that Glandorf discloses “the range of phosphates to be about 6 to 125,” but Appellant’s claimed invention requires a specific polyphosphate—sodium hexametaphosphate—that has a specific number of phosphates. We also appreciate that Glandorf’s disclosure suggest sodium

hexametaphosphate. What Examiner appears to have failed to appreciate is that Appellant’s claimed invention requires that the soluble zinc polyphosphate complex made by combining zinc citrate and sodium hexametaphosphate has a specific phosphorus to zinc mole ratio, 20:1, and simply identifying a disclosure of polyphosphates that may comprise 6–125 phosphates in Glandorf fails to make obvious Appellant’s claimed phosphorus to zinc mole ratio.

Finally, the Board agreed with the Appellant that the Examiner failed to point out *why* a person of skill in the art would select the 20:1 ratio and that Glandorf does not provide the crucial “reasonable expectation of success” in modifying Glandorf’s Glass H.

The Board’s rejection of the Examiner’s argument should serve as a reminder that it is insufficient that a prior art reference simply discloses an overlapping range to establish a *prima facie* case for obviousness that requires making specific selections; the reference must provide a teaching, motivation, or suggestion that creates a reasonable expectation of success. As the Board reiterated, “rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Khan*, 441 F.3d 977, 988 (Fed. Cir. 2006). Applicants and practitioners should keep a sharp eye out for missing teachings, suggestions, or motivations when the cited reference discloses a wide range which overlaps with their claims.

## Double Patenting Rejection XII

Ultimately the Board affirmed the Examiner’s non-statutory double patenting rejection in Count XII based on the Qiao reference in light of Glandorf. Qiao’s claim 1 recites:

1. *A soluble zinc polyphosphate complex made by combining ingredients wherein the ingredients comprise:*

*an organic zinc salt comprising zinc lactate; and sodium hexametaphosphate mixed in a solvent acceptable for use in an oral care composition, in amounts that provide a phosphorus to zinc mole ratio of 15:1 to about 25:1,*

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wherein the zinc polyphosphate complex has the property of reduced solubility in water at a first condition of 37° C. and a pH of about 7.4 in the presence of 1% by weight Bovine Serum Albumin protein when compared with a second condition of 25° C. and a pH of 5.4 in the absence of protein, the reduction in solubility being sufficient to allow the soluble zinc polyphosphate complex in a saturated solution at the second condition to precipitate from the saturated solution at the first condition.

(emphasis in Decision).

While Qiao claims using zinc lactate salts as precursors instead of zinc citrate along with a narrow range of mole ratios that encompasses the claims in the Application, the Board returned to Glandorf's disclosure of a preference for "polyvalent cations [which] are inorganic cations supplied from salts such as...citrate, [e.g., zinc citrate,] lactate, [e.g. zinc lactate] and oxalate or from oxides or hydroxides." Thus, Glandorf taught that Qiao's zinc lactate is interchangeable with the Application's zinc citrate.

Interestingly, the Board also noted that Appellant had filed a terminal disclaimer during prosecution of the Qiao application, which disclaimed the terminal part of the statutory term of any patent granted from Qiao's application which would extend beyond the expiration date of any patent granted on the Application being appealed. The Board concluded, "Thus, Appellant already recognized that the subject matter claimed in Qiao is an obvious variant of the subject matter Appellant claimed in the Application on Appeal."

The MPEP states that an applicant may file a terminal disclaimer and disclaim any time beyond the expiration of any patent granted or pending reference application. See MPEP §804.02. The MPEP also notes that filing such a disclaimer "simply serves the statutory function of removing the rejection of double patenting and raises neither a presumption nor estoppel on the merits of the rejection." See MPEP §804.02(II) quoting *Quad Environmental Technologies Corp. v. Union Sanitary Dist.*, 946 F.2d 870 (Fed. Cir. 1991). A terminal disclaimer is not, according to the MPEP, an admission that the non-statutory double patenting rejection is correct.

It seems the Board treated the terminal disclaimer in this case as just that. Most recently, the Federal Circuit

adhered to its *Quad Environmental* ruling in *SimpleAir, Inc. v. Google LLC*, where the Panel ruled a district court incorrectly treated SimpleAir's terminal disclaimer as an admission in determining claim preclusion issues. 884 F.3d 1160, 1168 (Fed. Cir. 2018). In *SimpleAir*, the Panel pointed to its prior ruling in *Motionless Keyboard Co. v. Microsoft Corp.* that "[a] terminal disclaimer is simply not an admission that a later-filed invention is obvious." 486 F.3d 1376, 1385 (Fed. Cir. 2007). In *SimpleAir* the court likened terminal disclaimer to other statements made to overcome rejections:

Although a terminal disclaimer does not conclusively show that a child patent involves the same cause of action as its parent, the terminal disclaimer is still very relevant to that inquiry. By filing a terminal disclaimer, a patent applicant waives potentially valuable rights. We do not lightly presume that patent applicants forfeit the right to alienate their patents, and in certain cases years of exclusivity, as a mere procedural expedient. Rather, as occurred here, applicants typically file terminal disclaimers to overcome obviousness-type double patenting rejections. In construing the scope of claims, we give considerable weight to statements made by patent applicants during prosecution in order to overcome examiner rejections. See, e.g., *Alpex Comput. Corp. v. Nintendo Co. Ltd.*, 102 F.3d 1214, 1220 (Fed. Cir. 1996). *We see no reason to treat terminal disclaimers any differently.*

884 F.3d at 1368, emphasis added.

So why would the Board make such a contrarian ruling? It turns out that the patents at issue in *SimpleAir*, *Motionless Keyboard*, and *Quad Environmental* were all continuation applications while Qiao is not. Despite having the same title, applicants, and assignee, Qiao is not within the same patent family as the Application on Appeal. While the Federal Circuit has repeatedly held that a terminal disclaimer is not an admission that a child application is not patentably distinct from the parent, at least in this case, the PTAB seems to be signaling that the rule against terminal disclaimers for child applications being conclusive admissions of obviousness does not extend to applications that do not share the same patent family continuity.

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