

UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte ROBERT LEE REIERSON and TODD WILLIAM DOMKE

Appeal 2008-5240
Application 10/783,721
Technology Center 1600

Decided: January 5, 2009

Before DONALD E. ADAMS, DEMETRA J. MILLS, and FRANCISCO C.
PRATS, *Administrative Patent Judges*.

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DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 involving claims to an oral care composition. The Examiner has rejected the claims as obvious. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

STATEMENT OF THE CASE

Claims 1-3, 6, 8, 9, 15-20, 41-44, 49, and 51 are pending, stand finally rejected, and are on appeal (App. Br. 2).¹ Claim 1 is representative and reads as follows:

1. An oral care composition, comprising:
water soluble monoalkyl and dialkyl phosphate ester salts, wherein the molar ratio of monoester salts to diester salts is greater than 1,
an abrasive agent, provided that the abrasive agent is not a calcium based abrasive agent, and
a peroxide tooth whitening agent.

The Examiner cites the following documents as evidence of unpatentability:

Gordon	US 4,522,805	Jun. 11, 1985
Carter et al.	US 5,019,373	May 28, 1991
Fischer	US 5,376,006	Dec. 27, 1994

The following rejection is before us for review:

Claims 1-3, 6, 8, 9, 15-20, 41-44, 49, and 51 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Carter in view of Gordon (Ans. 3-5).

OBVIOUSNESS

ISSUE

The Examiner finds that Carter discloses dentifrice and mouthwash compositions that have monoalkyl and dialkyl phosphate salts (Ans. 3). The Examiner also finds that “[p]olishing agents or abrasive agents used in the compositions include silicas” (*id.* at 4). The Examiner further finds that

¹ Appeal Brief filed October 18, 2007.

Carter “differs from the instant claims insofar as it does not teach using a peroxide in the oral care compositions” (*id.*).

To meet that limitation, the Examiner cites Gordon as using urea or carbamide peroxide in dentifrices, the peroxide “adher[ing] to the tissues and thereby . . . remain[ing] in place for a relatively long period of time while releasing more nascent oxygen to aid in debriding tissues and to inhibit odor-forming bacteria” (*id.* at 4). The Examiner further notes Gordon’s disclosure that the peroxide “effects a foaming action, which mechanically tends to raise the plaque and bacteria from incipient periodontal lesions and prevents them from releasing their destructive enzymes in the gum pocket” (*id.* at 4-5).

Based on these teachings, the Examiner concludes that one of ordinary skill in the art would have considered it obvious to use “carbamide peroxide in the compositions of the primary reference motivated by the desire to produce a dentifrice with the ability to inhibit odor-forming bacteria and reduce plaque as disclosed by the secondary reference” (*id.* at 5).

Appellants argue that the combined disclosures of Carter and Gordon would not have rendered claim 1 obvious to a person of ordinary skill in the art because each reference is “deficient with respect to the limitation of Appellant’s claims 1 and 41 requiring that the abrasive agent component of Appellant’s claimed invention is not a calcium based abrasive agent” (App. Br. 6). Appellants further argue that, even if the cited references established the *prima facie* obviousness of claim 1, comparative evidence has been presented which rebuts any *prima facie* finding of obviousness (*id.* at 6-7).

Appellants also state that “[c]laims 1-3, 6, 8, 9, 15-20, 41-44, 49, and 51 stand or fall together” (*id.* at 2).

Given the positions advanced by the Examiner and Appellants, the issue with respect to this rejection is whether the Examiner has made a prima facie case that a person of ordinary skill in the art would have considered claim 1 obvious in view of Carter and Gordon, and if so, whether Appellants have provided sufficient evidence of unobviousness to rebut the Examiner’s prima facie case.

FINDINGS OF FACT

1. Carter discloses “highly improved detergent compositions suitable for use as dentifrices and mouth washes” (Carter, col. 1, ll. 9-10). Carter discloses that by using a “specific dialkyl phosphate in the form of a salt, together with a monoalkyl phosphate salt to modify the foam characteristics of the product, a composition can be obtained which in use is capable of producing superior foam characteristics and cleaning power, that cannot be matched by any other product” (*id.* at col. 1, ll. 19-24).
2. Carter discloses that the “amount of monoalkyl . . . phosphate salt present in the composition . . . is from 0.1, conveniently from 1 to 95%, preferably from 2 to 90% by weight” (Carter, col. 2, ll. 33-36), that the “amount of the shorter chain dialkyl . . . phosphate salt present in the composition . . . is from 0.1, conveniently from 1 to 95%, preferably from 5 to 90% by weight” (*id.* at col. 2, ll. 60-63), and that the composition can also optionally contain “up to 50%, usually from 0.1 to 50%, preferably from 1 to 20% by weight” of a longer chain dialkyl phosphate salt (*id.* at col. 3, ll. 16-17).

3. Appellants do not dispute, and therefore concede, that the percentages of monoalkyl and dialkyl phosphate esters disclosed by Carter meet the limitation in claim 1 with respect to the molar ratio of those ingredients. *See* 37 CFR § 41.37(c)(1)(vii) (“Any arguments or authorities not included in the brief or a reply brief filed pursuant to § 41.41 will be refused consideration by the Board, unless good cause is shown.”).

4. Carter discloses that dentifrice compositions containing the monoalkyl and dialkyl phosphates can contain “[p]olishing agents (or abrasive agents), such as silicas, calcium hydrogenphosphate, calcium carbonate, calcium pyrophosphate, calcium hydroxyapatite and alumina” (Carter, col. 3, ll. 31-34).

5. Example 1 of Carter is a dentifrice that includes sodium dioctyl phosphate, sodium monolauryl phosphate, and sodium dilauryl phosphate as the phosphoesters, and silica (Carter, col. 5, ll. 15-28).

The dentifrice described in Example 1 does not contain a calcium-based abrasive agent (*see id.*).

6. Example 2 of Carter discloses dentifrices that include monoalkyl and dialkyl phosphate esters, as well as abrasive silica (Carter, col. 5, ll. 31-56).

The dentifrice described in Example 2 does not contain a calcium-based abrasive agent (*see id.*).

7. Carter differs from claim 1 in that Carter does not disclose the presence of a peroxide tooth whitening agent in its dentifrice compositions.

8. Gordon discloses “a dentifrice which is formulated to synergistically effect the removal of dental plaque, reduce bacteria and to aid in the control of periodontal disease by its chemical and mechanical actions” (Gordon, col. 1, ll. 21-25).

9. Gordon discloses that its dentifrice composition includes urea or carbamide peroxide (Gordon, col. 2, ll. 26-27). Gordon states:

[T]he carbamide peroxide functions to adhere to the tissues and thereby it remains in place for a relatively long period of time while releasing more nascent [sic] oxygen to aid in debriding tissues and to inhibit odor forming bacteria. It also effects a foaming action which mechanically tends to raise the plaque and bacteria from incipient periodontal lesions and prevents them from releasing their destructive enzymes in the gum pocket.

(*Id.* at col. 2, ll. 27-35.)

10. Gordon discloses that its compositions contain calcium carbonate, which “is used as an abrasive and polishing agent” (Gordon, col. 2, ll. 49-50), as well as sodium bicarbonate, which “also has an abrasive action on the teeth” (*id.* at col. 2, l. 56).

11. The Examiner cites Fischer as evidence that the peroxide compounds of Gordon inherently whiten teeth (Ans. 7). Appellants do not dispute, and therefore concede, that Gordon’s peroxide compounds will inherently whiten teeth. 37 CFR § 41.37(c)(1)(vii).

PRINCIPLES OF LAW

Addressing the question of obviousness in *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727 (2007), the Supreme Court reaffirmed that under the controlling inquiry, “the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved.” *Id.* at 1734 (quoting *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966)).

In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art. “[The Examiner] can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.”

In re Fritch, 972 F.2d 1260, 1265 (Fed. Cir. 1992) (citations omitted, bracketed material in original). Thus, as the Supreme Court pointed out in *KSR*, “a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR*, 127 S. Ct. at 1741. Rather, as the Court stated:

[I]t can be important to identify 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* . . . because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.

Id. (emphasis added); *see also id.* at 1740-41 (requiring a determination of “whether there was an apparent reason to combine the known elements *in the fashion claimed* by the patent at issue”) (emphasis added).

While holding that some rationale must be supplied for a conclusion of obviousness, the Court nonetheless rejected a “rigid approach” to the obviousness question, and instead emphasized that “[t]hroughout this Court's engagement with the question of obviousness, our cases have set forth an expansive and flexible approach” *Id.* at 1739. The Court also rejected the use of “rigid and mandatory formulas” as being “incompatible with our precedents.” *Id.* at 1741; *see also* 1742-43 (“Rigid preventative rules that

deny factfinders recourse to common sense, however, are neither necessary under our case law nor consistent with it.”).

The Court thus reasoned that the analysis under 35 U.S.C. § 103 “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *Id.* at 1741. The Court further advised that “[a] person of ordinary skill is . . . a person of ordinary creativity, not an automaton.” *Id.* at 1742.

Thus, “when the question is whether a patent claiming the combination of elements of prior art is obvious,” the relevant inquiry is “whether the improvement is more than the predictable use of prior art elements according to their established functions.” *Id.* at 1740.

Applying these concepts, the Court ultimately reaffirmed “that when a patent ‘simply arranges old elements with each performing the same function it had been known to perform’ and yields no more than one would expect from such an arrangement, the combination is obvious.” *Id.* (quoting *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273 (1976)).

It is well settled that evidence of unexpected results may rebut an examiner’s prima facie case of obviousness. *See In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998); *see also KSR*, 127 S. Ct. at 1740 (“The fact that the elements worked together in an unexpected and fruitful manner supported the conclusion that Adams’s design was not obvious to those skilled in the art.”) (discussing *United States v. Adams*, 383 U.S. 39 (1966)).

However, to establish that claimed subject matter yields an unexpected result, the claimed subject matter must be compared to the closest prior art. *In re Baxter Travenol Labs.*, 952 F.2d 388, 392 (Fed. Cir.

1991) (“[W]hen unexpected results are used as evidence of nonobviousness, the results must be shown to be unexpected compared with the closest prior art.”); *see also In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984) (“When an article is said to achieve unexpected (i.e. superior) results, those results must logically be shown as superior *compared* to the results achieved with other articles.”).

ANALYSIS

Appellants’ arguments do not persuade us that the Examiner failed to make a *prima facie* case of obviousness based on the cited references, nor are we persuaded that Appellants have made a showing of unexpected results adequate to rebut the Examiner’s *prima facie* case.

Specifically, because Gordon discloses that peroxide compounds are advantageous when included in dentifrice compositions (FF 9), we agree with the Examiner that a person of ordinary skill in the art would have been motivated to include a peroxide compound in Carter’s dentifrice compositions. As to the limitation in claim 1 requiring the composition to contain an abrasive that is not calcium-based, we note that Gordon includes calcium-based abrasives in its compositions (FF 10), and that Carter lists calcium-based abrasives alongside non-calcium-based abrasives (silica, alumina) (FF 4), with no explicit teaching that calcium-based abrasives should be avoided.

However, Carter does not teach or suggest that calcium-based abrasives are *required* in dentifrice compositions that contain monoalkyl and dialkyl phosphate esters. Rather, Carter’s examples in fact use non-calcium-based abrasives with no calcium-based abrasives being included in the dentifrice compositions. (FF 5, 6.) We therefore do not agree that the cited

combination of references fails to teach or suggest a composition that includes monoalkyl and dialkyl phosphate esters, as well as a non-calcium-based abrasive agent.

In sum, because Carter and Gordon disclose the desirability of including the ingredients recited in claim 1 in dentifrice compositions, we agree with the Examiner that a person of ordinary skill in the art would have considered the composition recited in claim 1 *prima facie* obvious. Moreover, because Appellants have not compared the composition of claim 1 to the closest prior art, we are not persuaded that Appellants have adequately rebutted the Examiner's *prima facie* case.

Specifically, Appellants argue that the Specification presents “comparative results that demonstrate at least one undesirable result of including a calcium-containing abrasive as a component in a composition containing the phosphate ester salts of Appellant's claimed compositions, i.e., loss of foaming performance, due to adsor[p]tion of phosphate ester from solution onto calcium based particles” (App. Br. 6 (citing Spec. 27)). Appellants urge that neither Carter nor Gordon evinces any recognition of this undesirable interaction between calcium based abrasives and phosphate ester salts, and that therefore, “Appellant's results and the benefits, including the loss of foaming performance demonstrated by the comparative showing in the present application, of excluding calcium based abrasives from Appellant's claimed composition is not obvious in view of the teachings of Carter et. al. nor Gordon et. al.” (*id.* at 6-7).

We are not persuaded by these arguments. It is well settled that a showing of unexpected results sufficient to rebut a *prima facie* case of

obviousness must be based on a comparison between the claimed invention and the closest prior art. *See Baxter Travenol Labs.*, 952 F.2d at 392.

Thus, it may be true that a composition including monoalkyl and dialkyl phosphate esters, and a non-calcium-based abrasive, has superior foaming performance compared to a composition that uses a calcium-based abrasive. However, like claim 1, Carter's compositions contain monoalkyl and dialkyl phosphate esters and a non-calcium-based abrasive, with no calcium-based abrasive being present in the composition (*see* FF 5, 6). Therefore, in comparing the foaming performance of compositions containing non-calcium-based abrasives to calcium-based abrasives, Appellants have not compared the claimed composition to the closest prior art composition.

Moreover, because they have not compared the composition of claim 1 to the closest prior art, they have not shown that the claimed composition possesses any properties that would have been unexpected by a person of ordinary skill in the art. Rather, because Carter's compositions contain monoalkyl and dialkyl phosphate esters, and a non-calcium-based abrasive, like the composition of claim 1, one of ordinary skill in the art would expect Carter's compositions to have the same foaming performance as the composition of claim 1.

In sum, we conclude that the Examiner has made a prima facie case that a person of ordinary skill in the art would have considered claim 1 obvious in view of Carter and Gordon, and that Appellants have not provided sufficient evidence of unobviousness to rebut the Examiner's prima facie case. We therefore affirm the Examiner's obviousness rejection of

Appeal 2008-5240
Application 10/783,721

claim 1. Because they were not argued separately, claims 2, 3, 6, 8, 9, 15-20, 41-44, 49, and 51 fall with claim 1. 37 CFR § 41.37(c)(1)(vii).

AFFIRMED

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