

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MARILOU T. JOZIAK and STEVEN W. FISHER

Appeal 2008-1440
Application 10/317,505
U.S. Patent Application Publication 2004/0115140
Technology Center 1600

Decided: 2 May 2008

Before FRED E. MCKELVEY, *Senior Administrative Patent Judge*,
SALLY GARDNER LANE, and MICHAEL P. TIERNEY *Administrative
Patent Judges*.

LANE, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF THE CASE

The appeal is from a Final Rejection of claims 27-58. 35 U.S.C. § 134. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

The application was filed December 12, 2002. It was published as U.S. Patent Application Publication 2004/0115140 (“Pub. 2004/0115140”) on June 17, 2004. The real party in interest is said to be Colgate-Palmolive Company. (App. Br. at 2).

The following U.S. Patents were relied upon by the Examiner:

<u>Name</u>	<u>Patent No.</u>	<u>Issue Date</u>
Stiller et al.	5,628,985	May 13, 1997
Tsujita et al.	5,049,375	Sep. 17, 1991
Gaffar et al.	4,627,977	Dec. 9, 1986

Appellants did not dispute the status of any of these references as prior art.

Appellants appeal the rejection of claims 27-33, 41-46, 48, 49, and 51-58 under 35 U.S.C. § 103 over the combination of the teachings of Stiller and Tsujita. Appellants also appeal the rejection of claims 34-40, 47, and 50 under 35 U.S.C. § 103 over the combination of the teachings of Stiller, Tsujita, and Gaffar. Appellants did not separately argue the patentability of any of the rejected claims. Thus, we will review only one representative claim for each rejection. *See* Bd. R. 41.37(c)(1)(vii).

II. FINDINGS OF FACT

The record supports the following findings of fact as well as any other findings of fact set forth in this opinion, by a preponderance of the evidence.

1. Appellants' specification relates to "liquid dentifrice compositions," which comprise "concentration levels of water and humectant which are substantially higher than those used to prepare dentifrice pastes or gels. The liquid dentifrices are distinguished from mouth rinses as they contain abrasive materials which function to remove pellicle film deposits [tightly adherent deposits with yellow or brown pigments] from tooth surfaces." (Pub. 2004/0115140 at ¶ [0004]).

2. Claim 27 recites [material in brackets and some indentation added]:

A dentifrice comprising:

[1] water in an amount of about 35% to about 60% by weight,

[2] an abrasive, and

[3] a fluoride ion releasable fluoride salt,

the salt being present in the dentifrice in an amount of 0.75 to 2.0 % by weight and

fluoride ions are present in an amount of 1000 to 6000 ppm,

the dentifrice having a viscosity of about 10,000 cps to 50,000 cps.

3. Claim 34 recites “[t]he dentifrice of claim 32, wherein the surfactant is an alkyl aryl sulfonate,” further narrowing the limitation of claim 32, which depends from independent claim 27 and recites the addition of a surfactant to the dentifrice. (Claims 32 and 34).

4. Stiller relates to liquid dentifrice compositions for cleaning teeth. (Stiller at col. 1, ll. 7-16).

5. Stiller teaches that the liquid vehicle of the dentifrice can comprise 15-40% water by weight of the composition. (Stiller at col. 3, ll. 39-43).

6. The 15-40% water content of Stiller overlaps the 35-60% water content of claim 27.

7. The liquid dentifrice taught in Stiller comprises particulate silica abrasive material. (*Id.* at col. 1, ll. 61-64).

8. Appellants' specification discloses that fluoride ion releasable salts include sodium fluoride and sodium monofluorophosphate. (Pub. 2004/0115140 at ¶ [0014]).

9. The examples provided in Stiller indicate percentage of sodium monofluorophosphate or sodium fluoride in dentifrice formulations of between 0.91% (Stiller at col. 5, l. 45), 0.760% (*id.* at col. 6, l. 19), 0.750% (*id.* at col. 4, ll. 28 and 62; col. 5, ll. 10 and 27), or 0.275% (*id.* at col. 6, l. 35).

10. The 0.750%, 0.760% and 0.91% salt content of Stiller fall within the 0.7% to 2.% salt content of claim 27.

11. Stiller teaches that liquid dentifrices comprise fluoride ion sources to provide between 250 and 2000 ppm fluoride. (*Id.* at col. 3, ll. 6-10).

12. Appellants' specification discloses:

Liquid dentifrices sold over the counter conventionally contain fluoride compounds capable of releasing about 500 to 1100 parts per million (ppm) fluoride ion. Patients with high risk dental caries are frequently prescribed prescription anticaries dentifrice paste products which contain fluoride salts capable of releasing 3 to 5 times the amount of fluoride ion as conventionally incorporated in over the counter anticaries products.

(Pub. 2004/0115140 at ¶ [0005]-[0006]).

13. The 250 ppm to 2,000 ppm fluoride ion content of Stiller overlaps with the 1,000 to 6,000 ppm range of claim 27.

14. The liquid dentifrices taught in Stiller have viscosities "in the region 2,000 to 25,000 mPa s." (*Id.* at col. 3, ll. 60-62).

15. We take official notice of the fact that 1 centipoise equals 1 mPa s. *See* (1) NIST Special Publication 811, Guide for the Use of the International System of Units, p. C5 (Sept. 1991) and (2) Wikipedia, <http://en.wikipedia.org/wiki/poise> (accessed 16 April 2008) ("A centipoise is one millipascal-second (mPa·s) in SI units ($1 \text{ cP} = 10^{-2} \text{ P} = 10^{-3} \text{ Pa}\cdot\text{s}$). Centipoise is properly abbreviated cP, but the alternate abbreviations cps and cPs are also commonly seen.")

16. The 2,000 to 25,000 mPa·s of Stiller overlaps the 10,000 to 50,000 cps range of claims 27.

17. Tsujita relates to colloid fluoride solutions for preventing tooth decay. (Tsujita at col. 1, ll. 5-14).

18. Tsujita teaches that reacting fluoride ions with calcium ions in the presence of a peptizer can produce colloidal fluoride having an extremely small particle diameter. (*Id.* at col. 4, ll. 45-48).

19. Tsujita teaches that a solution comprising the colloidal fluoride can comprise 1 to 100,000 ppm fluorine in the colloidal particles. (*Id.* at col. 4, ll. 64-68).

20. Tsujita explains that "the larger the amount of fluorine incorporated into the dentifrice, the larger the calcium fluoride deposited on the surface of the tooth and the more remarkable the effect [in preventing tooth decay]." (*Id.* at col. 3, ll. 65-68).

21. Tsujita teaches "when the present invention is applied to the production of a transparent mouth-wash or dentifrice, the commercial value thereof can be further increased." (*Id.* at col. 8, ll. 59-62).

22. Gaffar relates to oral compositions for teeth cleaning that contain an anticalculus agent. (Gaffar at col. 1, ll. 4-5).

23. Gaffar teaches adding alkyl aryl sulfonate to the oral compositions. (*Id.* at col. 6, ll. 36).

III. ISSUES

The issues are:

(1) Whether Appellants have shown that the Examiner erred in rejecting claims 27-33, 41-46, 48, 49, and 51-58 under 35 U.S.C. § 103 as being unpatentable over Stiller and Tsujita.

(2) Whether Appellants have shown that the Examiner erred in rejecting claims 34-40, 47, and 50 under 35 U.S.C. § 103 as being unpatentable over Stiller, Tsujita, and Gaffar.

IV. LEGAL PRINCIPLES

To determine whether subject matter would have been obvious to those in the art under 35 U.S.C. § 103, we look to “the scope and content of the prior art . . . ; differences between the prior art and the claims at issue . . . ; and the level of ordinary skill in the pertinent art” *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966).

Recently, the Supreme Court noted that a combination of references renders claimed subject matter obvious under 35 U.S.C. § 103

[w]hen a work is available in one field of endeavor, design incentives and other market forces . . . prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability.

KSR Int’l Co. v. Teleflex Inc., 127 S.Ct. 1727, 1740 (2007).

Moreover, the Court observed that “[c]ommon sense teaches . . . that familiar items may have obvious uses beyond their primary purposes, and in

many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.” *Id.* at 1742. If the elements of a claimed invention work “together in an unexpected and fruitful manner,” *id.* at 1740, it may be patentable. Conversely, if familiar items are used for their primary purposes, even in different combinations, the combination may not be patentable unless there is something unexpected about the combination. *See Anderson’s-Black Rock, Inc. v. Pavement Salvage Co., Inc.* 396 U.S. 57, 60 (1969) (“The combination of putting the burner together with the other elements in one machine, though perhaps a matter of great convenience, did not produce a ‘new or different function’ [citation omitted]”).

“In cases involving overlapping ranges, [the Federal Circuit and the Court of Customs and Patent Appeals] have consistently held that even a slight overlap in range establishes a *prima facie* case of obviousness.” *In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003). “When an applicant seeks to overcome a *prima facie* case of obviousness by showing improved performance in a range that is within or overlaps with a range disclosed in the prior art, the applicant must ‘show that the [claimed] range is *critical*, generally by showing that the claimed range achieves unexpected results relative to the prior art range.’” *In re Geisler*, 116 F.3d 1465, 1469-70 (Fed. Cir. 1997).

V. ANALYSIS

Claims 27-33, 41-46, 48, 49, and 51-58

Appellants’ specification is drawn to “liquid dentifrices,” which have higher levels of water than dentifrice pastes or gels, but, unlike

mouthwashes, also include abrasives. (FF¹ 1). We will review claim 27 as a representative claim regarding this rejection. Claim 27 recites:

A dentifrice comprising:
water in an amount of about 35% to about 60% by weight,
an abrasive, and
a fluoride ion releasable fluoride salt, the salt being present in
the dentifrice in an amount of 0.75 to 2.0 % by weight and
fluoride ions are present in an amount of 1000 to 6000 ppm,
the dentifrice having a viscosity of about 10,000 cps to 50,000
cps.

(FF 2).

Stiller discloses liquid dentifrices comprising 15-40% water (FF 5), which overlaps the claimed range of “about 35% to about 60%.” (FF 6). Stiller discloses dentifrice compositions that include abrasives, for example particulate silica abrasive material. (FF 7). The examples in Stiller provide several dentifrice formulations that specify the percent fluoride salt, including 0.91%, 0.760%, and 0.750%. (FF 9). The fluoride salts disclosed in Stiller include sodium monofluorophosphate and sodium fluoride (FF 9), which are also described as fluoride ion releasable compounds in Appellants’ specification (FF 8). Stiller teaches fluoride ions between 250 and 2000 ppm (FF 11). Finally, Stiller teaches a viscosity of the liquid dentifrice from 2,000 to 25,000 mPa s (FF 14), which overlaps the claimed range of “about 10,000 cps to 50,000 cps.”

Tsujita teaches that it is desirable to incorporate larger amounts of fluorine into dentifrices to prevent tooth decay. (FF 20). To accomplish higher levels of fluorine, Tsujita teaches preparing colloidal fluoride solutions that comprise from 1 to 100,000 ppm fluorine (FFs 17-19).

¹ Finding of Fact.

Because both Stiller and Tsujita relate to dental care compositions (FFs 4 and 17), and Tsujita teaches that its disclosed colloidal fluoride solutions can be incorporated in mouth-washes or dentifrices (FF 21), Appellants have not shown that the Examiner erred in combining the disclosures of these two references. The combination of their disclosures teaches each of the elements recited in Appellants' claim 1, all of which are being used for the known purpose.

Appellants argue that “[n]either Stiller ‘985 nor Tsujita ‘375 disclose a range for the amount of a fluoride ion releasable salt.” (App. Br. at 4). According to Appellants, “[w]hen no range is given, there can be no optimization of the range.” (*Id.*). We disagree. The disclosure of individual values of percentages of fluoride ion releasable salts in the examples of Stiller fall within the claimed range.

Appellants also argue that “there is no suggestion of selecting the claimed species for these amounts [of water, fluoride ions, and viscosity] in combination with the species of the amount of fluoride ion releasable salt.” (App. Br. at 5). Appellants argued further that “the only teachings in Stiller ‘985 for selecting the combination of variables are in Examples 1-8, and these examples point away from the invention to compositions that are outside the scope of the claims.” (App. Br. at 5). To support their argument, Appellants note that the examples use more or less water than the claimed amount of “about 35% to about 60%.” (App. Br. at 5-6).

We note that the Examiner's rejection is under 35 U.S.C. § 103, not § 102 and that *In re O'Farrell*, 853 F.2d 894 (Fed. Cir. 1988), which Appellants rely upon as supposedly prohibiting “picking and choosing,” pertains only to § 102. *See In re Arkley*, 455 F.2d 586, 587-88 (CCPA 1972)

(noting in dictum: “Such picking and choosing may be entirely proper in the making of a 103, obviousness rejection, where the applicant must be afforded an opportunity to rebut with objective evidence any inference of obviousness which may arise from the *similarity* of the subject matter which he claims to the prior art . . .”). Thus, merely because Stiller recites other limits of the parameters claimed does not determine patentability of the claimed dentifrice.

Furthermore, Appellants have not pointed to any evidence, either within Stiller or in the understanding of those in the art, that a dentifrice would be inoperable if it included the amounts of releasable fluoride salt used in the examples with the claimed amount of water. Appellants have not shown that any of the claimed parameter is critical to a function of the claimed composition. In the absence of such evidence, we find that the claimed dentifrice is nothing more than a different arrangement of previously known components, each exhibiting their previously known function. Thus, we do not agree that Stiller “points away” from the claimed dentifrice. *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004) (“the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed.”).

Appellants argue, in their Reply Brief, that the Examiner uses a flawed assumption that “a given amount of all fluoride ion releasable salts provide the same level of fluoride ions, regardless of the vehicle in which they are placed . . .” (Reply Br. at 3). Appellants provide a comparison between two proprietary products as for support of their assertion. (*Id.*) No other account of this evidence in the record was cited by Appellants and it is

not supported by any references, affidavits, or declarations in the Reply Brief. Because we do not accept attorney argument in the place of factual evidence to show unexpected results, we give no weight to Appellants' argument.

Appellants also argued, in their Reply Brief, that "a person of skill in the art would not have been motivated to make the combination proposed by the Examiner" because while Stiller is "directed to silica-containing transparent liquid dentifrices," Tsujita is directed to "colloidal particles composed of 'peptizer' and 'difficulty [sic] soluble' fluoride salts that have a particle size of 0.005 to 1 micron." (Reply Br. at 4). Appellants further argue that the claimed dentifrice does not use colloid particles and so those in the art would not have looked to Tsujita. We disagree. Tsujita teaches that its colloid fluoride solutions can be used in mouth washes and dentifrices. (FF 21). Absent evidence other than attorney argument, we do not see why "design incentives and other market forces," *KSR*, 127 S.Ct. at 1740, would not encourage those in the art to combine these two prior art references.

Finally, Appellants argue that it would not have been obvious to merely add more fluoride salt to increase fluoride uptake, because this is technically difficult, as demonstrated by the use of colloid particles in Tsujita. (Reply Br. at 4). Stiller teaches fluoride ions between 250 and 2000 ppm (FF 11), which overlaps with the range of 1000-6000 ppm recited in claim 27 (FF 13). Thus, we see no merit in Appellants' argument that the levels of fluoride ion recited in claim 27 would not have been obvious. We note also that "The Prior Art" section of Appellants' specification provides "[l]iquid dentifrices sold over the counter conventionally contain fluoride

compounds capable of releasing about 500 to 1100 parts per million (ppm) fluoride ion.” (FF 12). Because Appellants did not separately argue the patentability of any dependent claims, we decline to consider the limitations recited in them. *See* Bd.R. 41.37(c)(1)(vii) (2007).

Considering that Appellant has presented no rebuttal evidence of unexpected results, or other secondary considerations, on the record before us, we conclude that the Appellant has not shown that the Examiner erred in rejecting claims 27-33, 41-46, 48, 49, and 51-58 under 35 U.S.C. § 103 over Stiller and Tsujita.

34-40, 47, and 50

We will review claim 34 as a representative claim regarding this rejection. Claim 34 recites “[t]he dentifrice of claim 32, wherein the surfactant is an alkyl aryl sulfonate,” while claim 32 recites “[t]he dentifrice of claim 27, wherein the composition further comprises a surfactant.”

Gaffar teaches the addition of alkyl aryl sulfonates to compositions used in dental care. (FF 23). Appellants raised no arguments against this rejection beyond those put forth for claims 27-33, 41-46, 48, 49, and 51-58, which we addressed above. Thus, because those in the art would combine Stiller, Tsujita, and Gaffar since each relates to dental care compositions, and Stiller and Tsujita would have rendered the dentifrice of claim 27 obvious, on the record before us, we conclude that Appellants have not shown that the Examiner erred in rejecting claims 34-40, 47, and 50 under 35 U.S.C. § 103, over Stiller, Tsujita, and Gaffar.

VI. ORDER

Upon consideration of the record and for the reasons given,

Appeal 2008-1440
Application 10/317,505

the Examiner's rejection of claims 27-33, 41-46, 48, 49, and 51-58
under 35 U.S.C. § 103 over Stiller and Tsujita is AFFIRMED; and

the Examiner's rejection of claims 34-40, 47, and 50 under 35 U.S.C.
§ 103 over Stiller, Tsujita, and Gaffar, is AFFIRMED.

AFFIRMED

cc (via U.S. Mail):

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