

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROMAN M. BARABOLAK, ALBERT H. CHAPDELAINÉ,
JEFFREY S. HOOK, DANIEL J. ZYCK,
RONALD T. GREY, and VUKASIN LEVAKOV

Appeal 2007-2835
Application 10/448,980
Technology Center 1700

Decided: January 30, 2008

Before CHUNG K. PAK, CATHERINE Q. TIMM, and
JEFFREY T. SMITH, *Administrative Patent Judges*.

PAK, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the Examiner's final rejection of claims 1 through 47, all of the claims pending in the above-identified application. We have jurisdiction pursuant to 35 U.S.C. § 6.

STATEMENT OF THE CASE

The subject matter on appeal is directed to a method of producing edible films useful for providing flavors and/or oral care agents (Spec. 1). The method involves, *inter alia*, adding a food grade acid to a film formulation and then adding aspartame, a known artificial low calorie sweetener, to the resulting mixture containing the film formulation and the food grade acid (Spec. 3 and claim 1). According to page 3 of the Specification, the “acid *may be* added at anytime before aspartame is included into the mixture [emphasis added].” Further details of the appealed subject matter are recited in representative claims 1, 15, and 31 reproduced below:

1. A method of producing edible thin film products comprising the steps of:

adding to a film formulation a food grade acid; and

adding aspartame to the film formulation and acid.

15. A method of producing edible thin films comprising the steps of:

producing a coating syrup that does not include aspartame;

adding to the coating syrup an acid;

adding aspartame to the coating syrup and acid; and

producing edible film from the coating syrup, aspartame, and acid.

31. A method for preparing a rolled film is provided comprising the steps of:

forming a mixture of at least one film-forming material in powder form with a food grade acid and water;

agitating the mixture;

adding to the mixture at least one ingredient selected from the group consisting of plasticizers, softening agents, colors, sweeteners, cooling agents, flavors and active ingredients, blending the mixture to obtain a homogeneous solution;

spreading the solution onto a moving substrate;

drying the solution on the substrate to create a flexible film; and

winding the film onto a take-up roll.

As evidence of unpatentability of the claimed subject matter, the Examiner has relied upon the following references:

Mothes	5,045,459	Sep. 3, 1991
Markson	5,900,416	May 4, 1999
Pearce	2003/0224090 A1	Dec. 4, 2003
Chen	WO 00/42992	Jul. 27, 2000

The Examiner has rejected the claims on appeal as follows:

1. Claims 1 through 4, 7 through 11, 13, 15 through 18, 21 through 25, 27, and 29 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Chen and Markson (Ans. 3);

2. Claims 5, 12, 14, 19, 26, 28, and 30 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Chen, Markson, and Pearce (Ans. 4);

3. Claims 6 and 20 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Chen, Markson, and Mothes (Ans. 4);

4. Claims 31 through 37 and 39 through 47 under 35 U.S.C. § 103(a) as unpatentable over the disclosure of Pearce (Ans. 5); and

5. Claim 38 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Pearce and Mothes (Ans. 6).

The Appellants appeal from the Examiner's decision rejecting the claims on appeal under 35 U.S.C. § 103(a).

PRINCIPLES OF LAW, FACTS, ANALYSES, AND CONCLUSIONS

Under 35 U.S.C. § 103, the factual inquiry into obviousness requires a determination of: (1) the scope and content of the prior art; (2) the differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) secondary considerations (e.g., unexpected results). *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966). “[A]nalysis [of whether the subject matter of a claim would be obvious] 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.” *KSR Int’l v. Teleflex, Inc.*, 127 S. Ct. 1727, 1740-41 (2007), quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006), see also *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1361 (Fed. Cir. 2006) (“The motivation need not be found in the references sought to be combined, but may be found in any number of sources, including common knowledge, the prior art as a whole, or the nature of the problem itself.”); *In re Bozek*, 416 F.2d 1385, 1390 (CCPA

1969)(“Having established that this knowledge was in the art, the examiner could then properly rely, as put forth by the solicitor, on a conclusion of obviousness ‘from common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular reference.’”).

1. *CLAIMS 1-4, 7-11, 13, 15 through 18, 21-25, 27, AND 29 BASED ON CHEN and MARKSON¹:*

The Appellants do not dispute the Examiner’s findings at page 3 of the Answer dated February 1, 2007 that:

Chen et al discloses a method of producing an edible thin film product wherein an aqueous solution of a film forming ingredient is prepared followed by addition of aspartame and citric acid (page 10, line 14; page 11, line 26 and page 15, lines 19-24). The film forming ingredient in Chen et al includes pullulan (page 14, line 16) as well as active agents and medicaments (page 10, lines 22-32 and page 11, lines 1-12). Chen et al further discloses casting the film using a coating technique (page 15, lines 1-15 and Fig. 2) followed by drying of the film (Fig. 2). Spraying and dipping (claim 12) are conventional coating techniques. Chen et al also discloses that the film can be placed in a roll dispenser (page 6, line 7 and Fig. 3).

The Appellants contend that the Examiner has not established a prima facie case of obviousness because one of ordinary skill in the art would not have been led to employ the claimed sequence of adding the food grade acid prior to aspartame addition (Br. 11-14 and Reply Br. 1-4). The Appellants also contend that any prima facie case of obviousness established by the

¹ The Appellants’ arguments are directed to claims 1 and 15 only (Br. 11-14). Accordingly, we limit our factual findings and conclusions solely to these claims consistent with 37 C.F.R. § 41.37(c)(1)(vii)(2004).

Examiner is rebutted since the Affidavit of record relied upon by the Appellants shows that the claimed mixing sequence and condition impart unexpected results (Br. 14 and Reply Br. 4).

On the other hand, the Examiner contends, *inter alia*, that the mere change in sequence of mixing ingredients to form the same mixture taught in Chen does not impart patentability to the claimed subject matter absent unexpected results (Ans. 4).² The Examiner also contends that the showing relied upon in the Affidavit does not demonstrate that the claimed subject matter imparts unexpected results (Ans. 7).

The issues before us are, therefore, whether one of ordinary skill in the art would have been led to employ the claimed mixing sequence, and if so, whether the Appellants have demonstrated that the Affidavit is sufficient to rebut any prima facie case of obviousness established by the Examiner.

As is apparent from Examples 1-3 at pages 17-18 of Chen, adding and combining the same ingredients as those claimed, including a food grade acid (citric acid), aspartame and film forming materials, is known. Although Chen does not specifically mention adding citric acid to the film forming materials prior to aspartame (flavoring agent) addition, we find that Chen exemplifies forming “a homogeneous mixture of ingredients” by combining citric acid, aspartame, and film forming materials simultaneously (Chen, p. 17). We find that Chen also mentions that a flavoring agent, such as aspartame, can be added “before or after film forming” (Chen, p. 15, ll. 23-25, and p. 10, ll. 7-14). Thus, we concur with the Examiner that one of ordinary skill in the art would have been led to combine acid, aspartame and

² The Examiner takes this position in an alternative manner, without relying on the disclosure of Markson..

film forming ingredients either simultaneously or sequentially (including the claimed sequence), with a reasonable expectation of successfully forming a homogeneous mixture of the ingredients involved. From the disclosure of Chen, one of ordinary skill in the art would have reasonably expected to form the same mixture regardless of which ingredient, the acid or aspartame, is added first to the film forming materials since the ultimate reason for adding the ingredients involved is to form a mixture. *In re Hampel*, 162 F.2d 483, 485 (CCPA 1947) (“There is nothing in the instant record which indicates that the particular order of steps produces results differing in any way from those which would be brought about if another order of steps were followed”); *See also In re Burhans*, 154 F.2d 609, 692 (CCPA 1946).

Having determined that the Examiner has established a prima facie case of obviousness, we look to the rebuttal evidence relied upon by the Appellants. The Examiner has correctly found (Ans. 7) that:

The [A]ffidavit, which relies upon the test on page 16 of appellant's [sic., Appellants'] [S]pecification, fails to present a comparison with the closest prior art, viz. Chen et al, wherein an acid and aspartame are added together as opposed to adding the acid and then the aspartame, as claimed by [the] [A]ppellant[s]. The [A]ffidavit merely shows that appellant's [sic., Appellants'] invention achieves improved and perhaps unexpected results over a control in which no acid is present at all. However, a proper comparison between appellant's [sic., Appellants'] invention and process wherein acid and aspartame are added together has not been presented by [the] [A]ppellant[s] anywhere in the record.

We find no evidence proffered by the Appellants, which indicates that the asserted unexpected results are derived from either a direct or an indirect comparison between the claimed subject matter and the closest prior art,

namely Chen. *In re Baxter Travenol Labs.*, 952 F.2d 388, 392 (Fed. Cir. 1991); *In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1964). Also, it is not clear from the showing relied upon in the Affidavit whether the asserted unexpected results are due to the employment of the acid or the claimed mixing sequence as alleged. *In re Heyna*, 360 F.2d 222, 228 (CCPA 1966); *In re Dunn*, 349 F.2d 433, 439 (CCPA 1965) (“While we do not intend to slight the alleged improvements, we do not feel it an unreasonable burden on appellants to require comparative examples relied on for non-obviousness to be truly comparative. The cause and effect sought to be proven is lost here in the welter of unfixed variables.”). Moreover, the showing referred to in the Affidavit is not commensurate in scope with the protection sought by claims 1 and 15 on appeal. While the Appellants contend that the pH conditions employed are critical to obtaining unexpected results (Br. 14), claims 1 and 15 do not recite such pH conditions, much less any pH conditions. *In re Grasselli*, 713 F.2d 731, 743 (Fed. Cir. 1983).

Under these circumstances, it cannot be said that the Appellants have demonstrated that the claimed subject matter achieves unexpected results relative to the subject matter exemplified in Chen. *In re Freeman*, 474 F.2d 1318, 1324 (CCPA 1973).

Thus, based on the totality of record, including due consideration of the Appellants’ arguments and evidence, we determine that the preponderance of evidence weighs most heavily in favor of obviousness of the subject matter recited in claims 1 through 4, 7 through 11, 13, 15 through 18, 21 through 25, 27, and 29 within the meaning of 35 U.S.C. § 103(a).

2. *CLAIMS 5, 12, 14, 19, 26, 28, AND 30 BASED ON CHEN, MARKSON, AND PEARCE:*

The Appellants do not dispute the Examiner's determination at page 4 of the Answer that:

It would have been obvious to encapsulate the citric acid used in the process of Chen et al, as above modified, in order to produce a film where the acid has a delayed release thereby permitting the acid flavoring to last over a longer time period since it is well known to encapsulate an acid used in a flavor film to create a delay in solvation and thus make the sour flavor of the acid last longer, as evidenced by Pearce et al (page 5, paragraph [0077]). Further, it would have been obvious to use a roll-up step for placing the film in the roll dispenser of Chen et al to allow easy insertion of the film into the dispenser since it is old to "spool" a dried film into rolls, as evidenced by Pearce et al (Ex. 1 on page 13). Also, it would have been obvious to cast the film in the process of Chen et al, as above modified, by spraying or extrusion since it is well known to cast films by spraying or extrusion, as evidenced by Pearce et al (page 11, [0176])

The Appellants only rely on the same arguments directed to claims 1 and 15 discussed above (Br. 16 and Reply Br. 5). Thus, for the same factual findings and conclusions set forth above, we determine that the preponderance of evidence weighs most heavily in favor of obviousness of the subject matter recited in claims 5, 12, 14, 19, 26, 28, and 30 within the meaning of 35 U.S.C. § 103(a).

3. *CLAIMS 6 AND 20 BASED ON CHEN, MARKSON, AND MOTHE:*

The Appellants do not dispute the Examiner's determination at pages 4 and 5 of the Answer that:

It would have been obvious to use sprayed dried acid as the acid in the process of Chen et al, as above modified, since spray granulated citric acid is more easily handled in bulk, as evidenced by Mothes et al (Abstract).

The Appellants only rely on the same arguments directed to claims 1 and 15 discussed above (Br. 16 and Reply Br. 5). Thus, for the same factual findings and conclusions set forth above, we determine that the preponderance of evidence weighs most heavily in favor of obviousness of the subject matter recited in claims 6 and 20 within the meaning of 35 U.S.C. § 103(a).

4. *CLAIMS 31-37 AND 39-47 BASED ON PEARCE³:*

The Appellants do not dispute the Examiner's findings at page 5 of the Answer that:

Pearce et al discloses a method for preparing a rolled film wherein a powdered mixture of pullulan and tartaric acid is formed and water is added to hydrate the ingredients, and the solution is mixed slowly (see pages 12-13, sections 0212-0220). The pullulan is interpreted to be in powdered form as it is subsequently hydrated by the water, hydration only being effective for pullulan in dried form. Pearce et al further discloses that flavoring and coloring agents are then added to the preformed base solution (see page 13, section 0221, Example 1). The solution is then spread on a stainless steel belt system, dried and spooled into a roll (see page 13, section 0221, Example 1). Pearce et al discloses that the film also contains medicaments and active agents (pages 9-10, sections 0136-0161). The acid as disclosed by Pearce et al can be encapsulated in order to create a delay in solvation (see page 5, section

³ The Appellants' arguments are directed to claim 31 only (Br. 15-16). Accordingly, we limit our factual findings and conclusions solely to this claim consistent with 37C.F.R. § 41.37(c)(1)(vii).

0077). Pearce et al discloses forming the film through extrusion, which would inherently involve an extruder (see page 11, section 0176). Pearce et al also discloses the use of a knife over roll coating technique, and discloses drying the film after the film has been cast (see page 11, sections 0178-0179).

Rather, the Appellants contend that “*Pearce* fails to disclose or suggest mixing a film-forming material with food grade acid and water before adding additional ingredients such as a sweetener” (emphasis original) (Br. 15 and Reply Br. 4). The Appellants also contend that the showing referred to in the Affidavit demonstrates that the claimed mixing sequence imparts unexpected results (*id.*).

The issues before us are, therefore, whether one of ordinary skill in the art would have been led to employ the claimed mixing sequence, and if so, whether the Appellants have demonstrated that the Affidavit is sufficient to rebut any prima facie case of obviousness established by the Examiner.

As is apparent from page 12, paragraphs 0197 to 0211, of Pearce, a base film formulation containing, *inter alia*, film-forming materials and tartaric acid (food grade acid) is mixed with distilled water to form a “fully hydrated mixture.” We find that Pearce also teaches adding, *inter alia*, an artificial flavoring agent to this hydrated mixture and making the resulting mixture into a film (Pearce, p. 13, Examples 1-4). Thus, contrary to the Appellants’ arguments at page 14 of the Brief, we find that Pearce teaches the claimed mixing sequence. In this regard, we note that claim 31, by virtue of using the transitional phrase “comprising,” permits the inclusion of unclaimed ingredients and steps, including the additional sweetener and acids taught by Pearce. *In re Baxter*, 656 F.2d 679, 686-87 (CCPA 1981)(“As long as one of the monomers in the reaction is [claimed]

propylene, any other monomer may be present because the term ‘comprises’ permits the inclusion of other steps, elements, or materials.”).

In any event, from the disclosure of Pearce, one of ordinary skill in the art would have reasonably expected to form the same mixture regardless of which ingredient, the acid or sweetener, is added first to the film forming materials since the ultimate reason for adding the ingredients involved is to form a mixture. *In re Hampel*, 162 F.2d at 485 (“There is nothing in the instant record which indicates that the particular order of steps produces results differing in any way from those which would be brought about if another order of steps were followed”); *See also In re Burhans*, 154 F.2d at 692.

Having determined that the Examiner has established a prima facie case of obviousness based on Pearce, we look to the rebuttal evidence relied upon by the Appellants. According to the Appellants (Br. 15), the claimed mixing sequence imparts unexpected advantages over that of Pearce. However, as indicated *supra*, Pearce fully describes the claimed mixing sequence. Therefore, it cannot be said that the showing referred to in the Affidavit evinces that the claimed mixing sequence is unexpectedly superior to Pearce’s mixing sequence since the claimed mixing sequence and the mixing sequence taught by Pearce are one and the same thing. *Compare In re Malagari*, 499 F.2d 1297, 1302 (CCPA 1974).

In addition, as discussed *supra*, the Examiner has correctly found at page 7 of the Answer that the showing relied upon in the Affidavit is not derived from either a direct or an indirect comparison between the claimed subject matter and the closest prior art, namely Pearce. *Baxter Travenol Labs.*, 952 F.2d at 392; *De blauwe*, 736 F.2d at 705.

Finally, it is not clear from the showing relied upon in the Affidavit that the asserted unexpected results are due to the employment of the acid or the claimed mixing sequence as alleged. *Heyna*, 360 F.2d at 228; *Dunn*, 349 F.2d at 439.

Under these circumstances, it cannot be said that the Appellants have demonstrated that the claimed subject matter achieves unexpected results relative to the subject matter exemplified in *Pearce*. *Freeman*, 474 F.2d at 1324.

Thus, based on the totality of record, including due consideration of the Appellants' arguments and evidence, we determine that the preponderance of evidence weighs most heavily in favor of obviousness of the subject matter recited in claims 31 through 37 and 39 through 47 within the meaning of 35 U.S.C. § 103(a).

5. *CLAIMS 38 BASED ON PEARCE AND MOTHESES:*

The Appellants do not separately argue the limitation of claim 38 (Br. 16). Rather, the Appellants rely on the same arguments directed to claim 31 discussed above (*id.*). Thus, for the same factual findings and conclusions set forth above, we determine that the preponderance of evidence weighs most heavily in favor of obviousness of the subject matter recited in claim 38 within the meaning of 35 U.S.C. § 103(a).

ORDER

In view of the forgoing, the decision of the Examiner is affirmed.

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

Appeal 2007-2835
Application 10/448,980

AFFIRMED

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