UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte DAVID N. FULMER,
JAMES R. WATERFALLEN, and
BRIAN GEORGE

Appeal No. 2006-2485
Application No. 10/925,646

ON BRIEF

Before ADAMS, GRIMES, and LINCK, Administrative Patent Judges.

GRIMES, Administrative Patent Judge.

DECISION ON APPEAL

This appeal involves claims to a method for removing iron deposits from a closed loop system. The examiner has rejected the claims as anticipated or obvious. We have jurisdiction under 35 U.S.C. § 134. We affirm.

Background

The specification describes a "method for removing iron deposits from the surface of a closed loop system." Page 3, lines 5-6. Closed loop systems are "systems that can be isolated from atmospheric oxygen," such as "boilers, cooling water systems, gas scrubbers, pipelines, desalination systems, [and] storage tanks." Page 1, lines 9-12.

The iron deposits are "iron compounds that build up in the internals of closed loop systems." Page 4, lines 21-24.

The method comprises contacting the surface with an aqueous solution of an oxygen scavenger and introducing dialkylhydroxylamine into the closed loop system at a concentration that causes the iron deposits to release from the surface. Page 3, line 5, to page 4, line 6. The specification states that the dialkylhydroxylamine is diethyl-hydroxylamine, di-isopropylhydroxylamine, or a mixture of them. Page 3, lines 10-11.

The oxygen scavengers "are chemical reducing agents," such as hydrazine and carbohydrazides. Page 5, lines 21-24. The specification indicates that "[t]he oxygen scavenger is preferably added in a quantity sufficient to reduce substantially all of any compound or compounds present that could oxidize dialkylhydroxylamine [DAHA] to avoid consumption of the DAHA." Page 5, lines 15-17. The specification states that, "[f]or most closed loop systems, the concentration of DAHA necessary to achieve [release of iron deposits] is from about 3 to about 500 parts per million (ppm) DAHA in the total solution within the closed loop system." Page 7, lines 13-15. "For the purposes of the present invention, the term parts per million is determined as milligrams of DAHA per liter of fluid within the closed loop system." Page 7, lines 19-21.

Discussion

1. Claim construction

Claims 1-23 are pending and on appeal. Appellants have not separately argued the claims. Therefore, within each rejection, the claims stand or fall together. We will focus on claim 1, the broadest claim on appeal. We will also focus on claims 5, 6, 15, and 21, which are representative. Claims 1, 5, 6, 15, and 21 read as follows:

1. A method for removing iron deposits from the surface of a closed loop system comprising the steps of:
(a) contacting the surface of the closed loop system having iron deposits with an aqueous solution of an oxygen scavenger; and
(b) introducing dialkylhydroxylamine into the closed loop system at a concentration sufficient to cause the iron deposits to release from the surface of the closed loop system;
wherein the dialklhydroxylamine is selected from the group consisting of diethylhydroxylamine, di-isopropylhydroxylamine, and mixtures thereof.

5. The method of Claim 1 wherein the oxygen scavenger is selected from the group consisting of a sulphite salt, a bisulfite salt and mixtures thereof.

6. The method of Claim 5 wherein the oxygen scavenger is sodium bisulfite.

15. A method for removing iron deposits from the surface of a closed loop system comprising the steps of:
(a) contacting the surface of the closed loop system having iron deposits with an aqueous solution of an oxygen scavenger;
(b) introducing dialkylhydroxylamine into the system at a concentration sufficient to cause the iron deposits to release from the surface of the closed loop system; and
(c) introducing a dispersant into the system;
wherein the dialkylhydroxylamine is selected from the group consisting of diethylhydroxylamine, di-isopropylhydroxylamine, and mixtures thereof.

21. The method of claim [15] wherein the dispersant is a copolymer of acrylic acid and 2-acrylamido-2-methyl propane sulfonic acid

Thus, claim 1 is directed to a method for removing iron deposits from the surface of a closed loop system. The method comprises: (a) contacting the surface of a closed loop system having iron deposits with an aqueous solution of an oxygen scavenger, and (b) introducing diethylhydroxylamine and/or di-isopropylhydroxylamine into the closed loop system at a concentration sufficient to cause the iron deposits to release from the surface.

"Unless the steps of a method actually recite an order, the steps are not ordinarily construed to require one." Interactive Gift Express Inc. v. Compuserve Inc., 256 F.3d 1323, 1342, 59 USPQ2d 1401, 1416 (Fed. Cir. 2001). "Interactive Gift recites a two-part test for determining if the steps of a method claim that do not otherwise recite an order, must nonetheless be performed in the order in which they are written. First, we look to the claim language to determine if, as a matter of logic or grammar, they must be performed in the order written. . . . If not, we next look to the rest of the specification to determine whether it 'directly or implicitly requires such a narrow construction.' If not, the sequence in which such steps are written is not a requirement." Altiris Inc. v. Symantec Corp., 318 F.3d 1363, 1369-70, 65 USPQ2d 1865, 1869 (Fed. Cir. 2003) (internal citations omitted).

We find no language in claim 1 that requires the recited steps to be performed in the order in which they are written. Appellants argue that the transition "comprising the steps of" requires "sequenced steps." Reply Brief, page 4. We do not agree. This language merely requires that both of the recited steps be conducted. It does not require that the steps be conducted in a particular order, or even sequentially.

We also conclude that the specification does not "directly or implicitly" require that the steps of claim 1 be performed in the order in which they are written. Instead, we conclude that claim 1 encompasses methods in which the recited steps are performed simultaneously.

Appellants argue, however, that "in the application itself, it is clear at, for example, paragraphs 16 and 18 that [steps (a) and (b)] are two separate steps." Reply Brief, page 4. At paragraph 16, the specification states that "[i]n the method of the

present invention, before the DAHA is introduced, the closed loop system is treated with an oxygen scavenger to remove oxygen and chlorine and other oxidizing compounds from the system. The oxygen scavenger is preferably added in a quantity sufficient to reduce substantially all of any compound or compounds present that could oxidize dialkylhydroxylamine to avoid consumption of the DAHA." Page 5, lines 13-17. At paragraph 18, the specification states that "[t]he DAHA is introduced into a closed loop system after the oxygen and other oxidizing agents have been scavenged." Page 6, lines 9-10.

These statements describe a method in which oxygen scavenger is added before DAHA. However, we do not agree that these statements limit the method defined by the pending claims. First, both of the cited passages are found in the section of the specification headed "Description of the Preferred Embodiments," indicating that performing the steps recited in claim 1 sequentially is merely a preferred embodiment of the disclosed method. Second, these statements do not indicate that the method cannot be effectively used if the steps are conducted in a different order, such as if the steps are conducted simultaneously. In particular, these statements do not indicate that the addition of oxygen scavenger at the same time as DAHA would not reduce the consumption of DAHA by oxygen compounds. Therefore, we conclude that these statements are insufficient to "directly or implicitly" require that the steps of claim 1 be performed in the order in which they are written.

Appellants also argue that, "[i]n the response to the office action, filed on May [sic, April] 5, 2005, the two step aspect of the claims of the present invention was made clear in the arguments over the Examiner's section 112 rejections." Reply Brief, pages 5-6.

We are not persuaded by this argument for two reasons. First, we have reviewed the § 112 arguments made in the response filed on April 5, 2005, but do not find any clear disclaimer of a one-step process. In fact, Appellants argued that a separate step of contacting a system with an oxygen scavenger is "not essential because the invention will still work by adding enough DAHA." Response filed on April 5, 2005, page 3. Second, "in proceedings before the PTO, claims in an application are to be given their broadest reasonable interpretation consistent with the specification." In re Sneed, 710 F.2d 1544, 1548, 218 USPQ 385, 388 (Fed. Cir. 1983). It is improper to read limitations into the claims during prosecution based on arguments presented by the applicant, even if such arguments may create a prosecution history estoppel after the patent issues.

Claim 5 depends from claim 1 and recites that the oxygen scavenger is a sulphite salt, a bisulfite salt, or a mixture of them.

Claim 6 depends from claim 5 and recites that the oxygen scavenger is sodium bisulfite.

Claim 15 substantially corresponds to claim 1, except that it recites a further step of "introducing a dispersant into the system."

Claim 21 ultimately depends from claim 15 and recites that the dispersant is a copolymer of acrylic acid and 2-acrylamido-2-methyl propane sulfonic acid.

2. Scheurman

The examiner has rejected claims 1, 7-9, and 22 under 35 U.S.C. § 102(b) as anticipated by Scheurman.[1] The examiner notes that "Scheurman teaches a method of inhibiting corrosion in a closed loop system comprising a first component hydrazine and

[1] Scheurman, III, U.S. Patent No. 5,589,107, issued December 31, 1996.

a second component hydroxylamine. In col. 4, lines 50-55, Scheurman teaches decreasing the iron levels in the boiler system." Examiner's Answer, page 3. "In col. 5, lines 5-20, Scheurman teaches adding the composition to the boiler and reducing the dosage of the composition when the total iron level is reduced to a non-detectable level." Examiner's Answer, page 7. The examiner reasons that "Scheurman teaches using the same composition and performing the same method steps, therefore, the limitations are inherently met by the teachings of Scheurman." Id.

We conclude that the examiner has presented a prima facie case that claim 1 is anticipated. Scheurman describes a "method for inhibiting corrosion of ferrous metal surfaces in an aqueous system," such as a closed loop cooling system. Col. 1, lines 58-59; col. 2, lines 16-17. The method comprises adding to the system water a first component selected from carbohydrazide, hydrazine, and their water-soluble salts and a second component selected from certain hydroxylamine compounds, most preferably N,N-diethylhydroxylamine (DEHA). Col. 1, lines 60-67; col. 2, lines 53-56.

Appellants argue that Scheurman "teaches passivat[ing] iron and steel surfaces (col. 1, lines 5-9)," which is defined in Scheurman, at column 1, lines 29-34, as protecting metal surfaces from "attack by oxygen or other chemicals." Appeal Brief, page 6. Appellants argue that passivating is "very different from the method of the present invention," which is concerned with "clean[ing] surfaces by removing iron deposits, not passivat[ing] them." Id. In particular, "[i]n passivation, the iron deposits that are present stay in place and the surface of the system is treated to mitigate or eliminate further corrosion." Appeal Brief, page 7.

We agree that the objective of the method described in Scheurman is passivating the metal surfaces, not specifically removing iron deposits. However, Scheurman reasonably appears to teach the removal of iron deposits. As pointed out by the examiner, Scheurman states that, "[w]hen the boiler is started up, the present composition is dosed at an effective rate . . . and the total iron level is monitored until it gets down to a non-detectable level." Col. 5, lines 7-10. This suggests that at least at the beginning of the method, that is, before it gets down to a non-detectable level, iron deposits are being released from the surface.

In addition, the specification describes using DEHA to cause the release of iron deposits. Page 3, lines 15-17. Appellants provide no evidence that, when DEHA is used according to the method of Scheurman, "the iron deposits that are present stay in place." Furthermore, even if some iron deposits stay in place due to passivation, this does not mean that the method does not "remov[e] iron deposits from the surface," as required by claim 1. Thus, we are not persuaded by Appellants' argument that the method described in Scheurman would not remove iron deposits from the surface. Instead, we conclude that the examiner has set forth a prima face case that Scheurman is introducing its composition to a "system having iron deposits" and at a DEHA concentration that is "sufficient to cause iron deposits to release from the surface."

Appellants also argue that "[o]ne of ordinary skill in the art of treating or cleaning closed loop systems such as taught in [Scheurman] would not be motivated to try to clean a system by overfeeding it with a passivation agent." Appeal Brief, page 7. As discussed above, we conclude that the examiner has set forth a prima facie case that Scheurman describes a DEHA concentration that is "sufficient to cause iron deposits to

release from the surface." Appellants have not shown that the amounts taught by Scheurman are not sufficient to cause the release of iron deposits. In fact, the example included in the Evidence Appendix of the Appeal Brief demonstrates that some iron deposits are released without DEHA. Thus, we find that the amounts of DEHA described in Scheurman would be sufficient to cause the release of loosely adhered iron deposits.

In addition, Appellants argue that Scheurman, at column 5, lines 18-31, states that its invention "is useful in passivating new or recently cleaned boilers. Clearly [Scheurman] thereby distinguished between cleaning and passivating. One would not clean an already clean system." Appeal Brief, page 8.

As discussed above, we agree that the objective of the method described in Scheurman is passivating the metal surfaces, not specifically removing iron deposits. However, it reasonably appears that some removal of iron deposits is occurring in the method of Scheurman. The fact that Scheurman describes "monitor[ing the iron level] until it gets down to a non-detectable level" indicates that Scheurman's method results in iron deposits being removed.

Appellants also rely on an example included in the Evidence Appendix of the Appeal Brief (originally filed April 5, 2005). Appellants argue that this example demonstrates the "difference between the prior art and the present invention." Appeal Brief, page 7. In particular, Appellants argue that this example demonstrates that "there is a dramatic increase in the amount of iron in solution as the method of the application is employed. This is clearly different from the teachings of [Scheurman] as illustrated at column 5, line 66- column 6, line 2." Id. In the cited passage, Scheurman states that

"[d]uring the test period [of about five months] the levels of oxygen, hydrazine, and iron in Unit 2 [a boiler system treated with the composition of Scheurman] were surprisingly more stable than the corresponding levels in Unit 1 [a boiler system treated with a commercial formulation]."

We do not agree that the example provides evidence that Scheurman does not anticipate claim 1. Appellants' example describes the iron removal from "pre-corroded carbon steel coupons" over the course of two days, whereas the examples in Scheurman describe the effect of carbohydrazide and DEHA over a period of about five months. Although Scheurman states that the iron levels were "surprisingly more stable" over the five-month period, these examples do not specifically describe the iron levels when the process was begun. Scheurman teaches that when the boiler is first started up, the total iron level is monitored until it gets down to a non-detectable level. Col. 5, lines 7-10. Based on this teaching, we agree with the examiner that it is reasonable to conclude that Scheurman's method causes iron deposits to be removed. Scheurman's disclosure that the iron level was stable after the system was passivated does not indicate that, at the beginning of the Scheurman process, iron deposits were not removed.

Appellants' arguments do not overcome the prima facie case of anticipation. Therefore, we affirm the rejection of claim 1 over Scheurman. Claims 7-9 and 22 fall with claim 1.

3. Veldman

The examiner has rejected claims 1, 7-10, 22, and 23 under 35 U.S.C. § 102(b) as anticipated by Veldman.[2] The examiner states that Veldman "teach[es] a method of reducing iron in hydrocarbon streams by contacting with a mixture of oxygen scavengers comprising a mixture of quinone and hydroxylamine. In reference to a closed loop system, Veldman teaches cleaning piping of stainless steel equipment." Examiner's Answer, page 4. The examiner also notes that "Example 1 [of Veldman] (col. 6-7 bridging) teaches treating a plant [with] the claimed composition and decreasing the amount of iron and corrosion as a result of treatment. Col. 7, lines 1-10, teaches that the plant, prior to treatment, has an increasing amount of total iron concentration. After treatment with the claimed composition, corrosion was reduced and the iron content decreased." Examiner's Answer, page 8. The examiner reasons that "the [claim] limitations are inherently met since Veldman is performing the same steps using the same composition, as the instantly claimed invention." Id.

We conclude that the examiner has presented a prima facie case that Veldman anticipates claim 1. Veldman describes "a method of inhibiting corrosion in gas or light hydrocarbon treating systems . . . by adding to the treating solution a mixture of oxygen scavengers from 0.001 to 50,000 ppm comprised of mixtures of a quinone and hydroxylamines" of a particular formula. Col. 2, line 65, to col. 3, line 4. The preferred hydroxylamines include diethylhydroxylamine. Col. 3, lines 13-18. "The oxygen scavengers can advantageously be mixed in deionized water. The resulting aqueous solution is preferably added to [the] treating solution in a concentration of 0.0001-50,000

[2] Veldman et al., U.S. Patent No. 6,059,992, issued May 9, 2000.

ppm, and more preferably 100-500 ppm (aqueous solution to treating solution)." Col. 2, lines 29-33. Veldman states that the oxygen scavengers "can be mixed in a ratio of 2-6 (and preferably 5) weight % quinone and 10-30 (and preferably 10) weight % hydroxylamine, with the balance [being] deionized water." Col. 5, lines 55-59.

In Example 1 of Veldman, 8 gallons of Inhibitor A, which contains 10 weight % DEHA, is initially added to a 12,000 gallon system. Col. 6, line 64, to col. 7, line 43. Thus, the system contained approximately 67 ppm DEHA. This amount is within the range of 3 to 500 ppm that is identified in the specification as being "sufficient to cause iron deposits to release from the surface of a closed loop system." Page 7, lines 11-15.

In Example 1, Veldman states that corrosion of the equipment was increasing but that, within two weeks of initial dosing with the composition, "[c]orrosion in the system was markedly reduced as indicated by solution iron decreasing from an initial concentration of 65 ppm to less than 30 ppm." Col. 7, lines 7-33. The presence of iron at the beginning of the process indicates that the system used in Veldman had iron deposits on its surface. In addition, because the DEHA concentration used in this example is identified in the specification as sufficient to cause iron deposits to release from the surface of a closed loop system, we agree that the examiner has set forth a prima facie case of anticipation.

Appellants argue that Veldman "is directed to corrosion inhibiting and not cleaning." Appeal Brief, page 9. In addition, Appellants argue that the independent claims each require that: "1) the method is applied in a system having surface iron deposits, and 2) the method is applied such that the iron deposits release from the surface of the system," and Veldman does not teach or suggest "these elements of the

claims." Appeal Brief, page 10. Appellants also argue that the claim limitations are not inherent in Veldman because "VELDMAN teaches at, for example, column 4, lines 26-42, adding an oxygen scavenger and alkanol amine together, not in separate steps" and "there is no evidence that the amounts of materials added to the closed loop system were sufficient to cause the iron deposits to release from the surface of the closed loop system." Reply Brief, page 5.

However, for the reasons discussed above, we conclude that Veldman teaches applying the method to a system having surface iron deposits and such that iron deposits release from the surface of the system. Thus, we conclude that the examiner has set forth a prima facie case that Veldman anticipates claim 1. Appellants' arguments do not overcome the prima facie case of anticipation. Therefore, we affirm the rejection of claim 1 over Veldman. Claims 7-10, 22, and 23 fall with claim 1.

4. Obviousness

The examiner has rejected claims 2-5, 11, 13, 15, 16, 19, and 20 under 35 U.S.C. § 103 as obvious over Scheurman in view of Waller.[3] We will focus on claims 5 and 15. Claim 5 depends from claim 1 and recites that the oxygen scavenger is a sulphite salt, a bisulfite salt, or a mixture of them. Claim 15 substantially corresponds to claim 1, except that it recites a further step of "introducing a dispersant into the system."

The examiner notes that "Scheurman fails to teach the addition of a dispersant and a sulfite salt," but argues that Waller "teach[es] the removal of iron oxide deposits using a reducing agent which includes sodium sulfite, DEHA, and hydrazine (col. 4, lines 54-57[)] in combination with a dispersant (Abstract, col. 4, lines 63-65). It would

[3] Waller et al., U.S. Patent No. 4,810,405, issued March 7, 1989.

have been obvious to a person of ordinary skill in the art to have modified the method of Scheurman to include equivalent reducing agents such as sodium sulfite, as taught by Waller et al., which are conventionally used for purposes of removing iron deposits." Examiner's Answer, page 5.

We conclude that the examiner has set forth a prima facie case of obviousness. Scheurman relates to the "inhibition and control of corrosion of metal surfaces in an aqueous system." Col. 1, lines 6-7. Scheurman teaches that "[c]orrosion generally arises from dissolved oxygen and other chemicals attacking the iron or steel surfaces." Col. 1, lines 18-20. To protect the ferrous metal surfaces, Scheurman describes adding chemicals, such as hydrazine, to chemically scavenge oxygen. Col. 1, lines 25-35. As discussed above, we conclude that the examiner has set forth a prima facie case that Scheurman anticipates claim 1.

To remove iron deposits from substrates, Waller describes an aqueous solution comprising a reducing agent/oxygen scavenger, such as sodium sulphite or hydrazine. Abstract; col. 1, lines 62-64; col. 4, lines 53-57. In addition, Waller describes including a dispersant. Abstract; col. 4, lines 63-65. Based on these teachings, we conclude that the examiner has set forth a prima facie case that it would have been obvious to include sodium sulphite and dispersant in the composition of Scheurman.

Appellants argue that, while Waller teaches rust removal, it "requires HEDPA [hydroxyethylidene diphosphonic acid] in a neutral solution. [Waller] teaches using diethylhydroxylamine, but only as a reducing agent and even then it is added concurrently with all of the other components of the cleaning solution." Appeal Brief, page 12. "It is entirely proper to point out that [a] combination of references does not

teach the inventive nexus of the claims even if the individual elements thereof might be within the scope of the claims. For example, if the reference teaches that all three of A, B, and C are required for a specific function, and it is being cited . . . merely to show that B was known, it is proper to state that such a reference would not necessarily suggest experimenting with B in combination with other elements." Reply Brief, page 5.

As pointed out by Appellants, Waller teaches sodium sulphite in combination with other components. However, based on the fact that it was known to add oxygen scavengers to protect metal surfaces from corrosion, we agree with the examiner that it would have been obvious to include a known oxygen scavenger, such as sodium sulphite, in the composition of Scheurman.

Appellants also argue that Waller does not suggest "that the two step process of the present invention would likely be successful in removing iron deposits. Since neither [Scheurman] nor [Waller] taken alone or in combination teach the two step aspect of the claims of the present invention, and since they also do not teach that [sic, the] basic elements of the invention, namely that a closed system can be cleaned just by first depleting the oxygen of the system and then adding a dialkylhydroxylamine, then the claims of the present invention are not obvious over [Scheurman] in view of [Waller]." Appeal Brief, page 12-13. However, as discussed above, claim 1 encompasses methods in which the steps are conducted simultaneously. For the same reasons, claims 5 and 15 encompass methods in which the steps are conducted simultaneously. Thus, this argument is not persuasive.

The examiner has established a prima facie case that it would have been obvious to include sodium sulphite and dispersant in the composition of Scheurman.

Appellants have not set forth any persuasive argument to the contrary. Therefore, we affirm the rejection of claims 5 and 15. Claims 2-4, 11, 13, 16, 19, and 20 fall with claims 5 and 15.

The examiner rejected claims 6, 17, and 18 under 35 U.S.C. § 103 as obvious over Scheurman in view of Waller and Haraer.[4] We will focus on claim 6, which depends from claim 5 and recites that the oxygen scavenger is sodium bisulfite.

The examiner stated that Scheurman in view of Waller "teach sulfite salts, but fail to teach sodium bisulfite." Examiner's Answer, page 5. However, the examiner reasoned that Haraer "teach[es] oxygen scavengers for boiler water" and "examples of equivalent scavengers which include sulfite and bisulfite salts, diethylhydroxylamine, and hydrazine. It would have been obvious to a person of ordinary skill in the art to have modified the modified method of Scheurman to include equivalent compounds such as bisulfite salts, as taught by Haraer et al., for purposes of performing the same function as oxygen scavengers." Examiner's Answer, pages 5-6.

We conclude that the examiner has set forth a prima facie case of obviousness. As discussed above, the examiner has set forth a prima facie case that Scheurman anticipates claim 1 and that Scheurman and Waller render claim 5 obvious. Haraer describes adding oxygen scavengers such as sulphite and bisulfite salts, hydrazine, hydroxylamine, and carbohydrazides to boiler water, to avoid the corrosive effect of dissolved oxygen. Col. 1, lines 28-36. Based on this teaching, we conclude that the examiner has set forth a prima facie case that it would have been obvious to include bisulfite salts, such as sodium bisulfite, in the composition of Scheurman.

[4] Haraer et al., U.S. Patent No. 5,164,110, issued November 17, 1992.

Appellants argue that Haraer "teaches the use of sulfite and bisulfite salts, diethylhydroxylamine, and hydrazine, as antioxidants useful for scavenging oxygen to protect tetra-substituted phenylenediamines which are the focal point for the oxygen scavengers that are the subject of [Haraer]. While generally low doses of the compounds claimed in the present invention are known to be effective in corrosion inhibition applications, and as oxygen scavengers in some applications, their use for cleaning in the two step method of the present invention is unknown." Appeal Brief, pages 14-15.

However, Appellants have not shown that the doses described in Scheurman would not be "sufficient to cause the iron deposits to release from the surface" of the system. In addition, Appellants have not shown that it would not have been obvious to include sodium bisulfite in the composition of Scheurman. Thus, Appellants' arguments do not overcome the prima face case that claim 6 would have been obvious. Therefore, we affirm the rejection of claim 6. Claims 17 and 18 fall with claim 6.

The examiner rejected claims 12, 14, and 21 under 35 U.S.C. § 103 as obvious over Scheurman in view of Waller and Bucher.[5] We will focus on claim 21, which ultimately depends from claim 15 and recites that the dispersant is a copolymer of acrylic acid and 2-acrylamido-2-methyl propane sulfonic acid.

The examiner stated that "Scheurman in view of Waller teach dispersants, but fail to teach the specific dispersant" of claim 21, which is taught by Bucher. Examiner's Answer, page 6. The examiner reasoned that "[i]t would have been obvious and within the level of the skilled artisan to have modified the modified method of Scheurman III to

[5] Bucher et al., U.S. Patent No. 4,867,944, issued September 19, 1989.

include equivalent dispersants, as taught by Bucher et al. for the purpose of performing the same function." Id.

Appellants argue that, because claim 15 is not anticipated or obvious over the applied art, the claims which depend from claim 15, such as claim 21, are also not anticipated nor obvious. However, we have affirmed the § 103 rejection of claim 15 over Scheurman and Waller. In our view, the references applied by the examiner reasonably would have suggested the method of claim 21 to a person of ordinary skill in the art. We therefore affirm the § 103 rejection of claim 21. Claims 12 and 14 fall with claim 21.

The examiner rejected claim 10 under 35 U.S.C. § 103 as obvious over Scheurman. Having affirmed the anticipation rejection of this claim over Veldman, we need not reach this rejection.

Summary

The examiner's position is supported by the preponderance of the evidence of record. Therefore, we affirm the rejection of claims 1, 7-9, and 22 under 35 U.S.C. § 102 over Scheurman, the rejection of claims 1, 7-10, 22, and 23 under 35 U.S.C. § 102 over Veldman, and the rejection of claims 2-6 and 11-21 under 35 U.S.C. § 103.

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

AFFIRMED

Donald E. Adams Administrative Patent Judge	))))) BOARD OF PATENT
Eric B. Grimes Administrative Patent Judge	)) APPEALS AND)) INTERFERENCES
Nancy J. Linck Administrative Patent Judge	))

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