

PRECEDENTIAL OPINION

Pursuant to Board of Patent Appeals and Interferences Standard Operating Procedure 2, the opinion below has been designated a precedential opinion.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MIN-HONG FU, COLLEEN A. HELBIG,
KENT J. EVANS, KATHLEEN M. CARMICHAEL,
and DAVID M. SKINNER

Appeal 2008-0601
Application 10/320,809
Technology Center 1700

Decided: March 31, 2008

Before MICHAEL R. FLEMING, *Chief Administrative Patent Judge*, and
BRADLEY R. GARRIS, ROMULO H. DELMENDO, SALLY G. LANE,
and MICHAEL P. COLAIANNI *Administrative Patent Judges*.

DELMENDO, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

This appeal under 35 U.S.C. § 134 (2002) from a final rejection of claims 1, 2, and 4-43 is before an expanded panel of this Board. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

We AFFIRM.

Appellants explain that, in the art of electrophotography, an electrophotographic plate comprising a photoconductive insulating layer on a conductive layer is imaged by first uniformly electrostatically charging the surface of the photoconductive layer. Then, the plate is exposed to a pattern of activating electromagnetic radiation such as light, which selectively dissipates the charge in the illuminated areas of the photoconductive insulating layer while leaving behind an electrostatic latent image in the non-illuminated areas. This electrostatic latent image may then be developed to form a visible image by depositing finely divided electrosopic toner particles on the surface of the photoconductive insulating layer, which toner image can then be transferred to a suitable receiving member such as paper. Spec. 1, l. 17 to 2, l. 2. Appellants state that they invented an electrostatographic imaging member having a charge transport layer containing a specified surfactant that reduces crystallization of the charge transport layer material. Spec. 1, ll. 4-7.

Claim 1, which is representative of the appealed claims, reads as follows:

1. An imaging member comprising:
 - an electrically conductive substrate or a substrate comprising an electrically conductive layer,
 - a charge generating layer,
 - a charge transport layer consisting of at least one charge transport component, a poly(fluoroacrylate)-graft-poly(methyl

methacrylate) surfactant which reduces the crystallization of the at least one charge transport component, and a polymer binder.

The Examiner rejected claims 1, 2, and 4-43 under 35 U.S.C.

§ 103(a).

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Borsenberger	4,471,039	Sep. 11, 1984
Akiyoshi	4,837,120	Jun. 6, 1989
Yoshida	5,389,478	Feb. 14, 1995
Kubo	5,637,142	Jun. 10, 1997
Yamamoto	5,853,931	Dec. 29, 1998
Pai	6,127,077	Oct. 3, 2000
Liu	6,277,535 B1	Aug. 21, 2001
Chambers	6,326,111 B1	Dec. 4, 2001

Yamada (as translated) JP 07-199486 Aug. 4, 1995

American Chemical Society (ACS) on STN File Registry RN 376363-80-3 (Dec. 18, 2001)(hereinafter “ACS”).

Appellants’ description of the prior art, identifying commercial product GF-300 (Spec. 4, ll. 4-6).

The Examiner rejected the claims under 35 U.S.C. § 103(a) as follows:

- I. Claims 1, 4, 9-15, 29-31, and 36-39 as unpatentable over the combined teachings of Yamamoto, Kubo (as evidenced by Appellants’ description at page 4, lines 4-6 of the Specification identifying commercial product GF-300), Yoshida, Chambers, and ACS (Ans. 7-15);

- II. Claims 1, 2, 4-7, 9-23, 25, and 27-43 as unpatentable over the combined teachings of Pai, Yamamoto, Kubo (as evidenced by Appellants' description at page 4, lines 4-6 of the Specification identifying commercial product GF-300), Yoshida, Chambers, and ACS (Ans. 16-24);
- III. Claims 1, 4, 6, and 8-15 as unpatentable over the combined teachings of Borsenberger, Yamamoto, Kubo (as evidence by Appellants' description at page 4, lines 4-6 of the Specification), Yoshida, Chambers, and ACS (Ans. 24-27);
- IV. Claims 1, 4-7, 9-18, 21-25, and 27-43 as unpatentable over the combined teachings of Liu, Yamamoto, Kubo (as evidenced by Appellants' description at page 4, lines 4-6 of the Specification), Yoshida, Chambers, and ACS (Ans. 27-33); and
- V. Claims 1, 4, 9-15, 18, 22, 23, 26, and 28 as unpatentable over the combined teachings of Yamada, Akiyoshi, Yamamoto, Kubo (as evidenced by Appellants' description at page 4, lines 4-6 identifying commercial product GF-300), Yoshida, Chambers, and ACS (Ans. 34-39).

Relying principally on *In re Baird*, 16 F.3d 380, 382 (Fed. Cir. 1992), Appellants contend that “the Examiner has not provided a motivation for a skilled artisan to select the specifically recited poly(fluoroacrylate)-graft-poly(methyl methacrylate) surfactant” because “the Examiner is applying an improper ‘obvious to try’ rationale to support the obviousness rejection.”
Substitute App. Br. 9.

The Examiner, on the other hand, asserts that Appellants “ignore the ability of the person having ordinary skill in the electrophotographic arts to recognize that the well-known and used commercially available GF-300 surfactant is reasonably expected to be useful as a perfluoroalkyl radical containing surfactant taught by Yamamoto in the formation of charge transport layers.” Ans. 44.

ISSUE

Have Appellants shown error in the Examiner’s conclusion that the claimed species is obvious over prior art which discloses a genus containing the species?

FINDINGS OF FACT

1. The real party in interest is said to be XEROX CORPORATION.
Substitute App. Br. 1.
2. Appellants acknowledge that electrophotographic imaging members comprising an electrically conductive layer, a charge generating layer, and a charge transport layer are well known in the prior art. Spec. 2, ll. 3-24.
3. Appellants further acknowledge that “[p]hase separation or crystallization is an important factor in the determination of, for example, upper limit concentration amount of the transport molecules that can be dispersed in a binder.” Spec. 2, l. 30 to 3, l. 3.

4. Appellants state that “[f]or example, in embodiments the charge transport layer comprises from about 20 to about 80 percent by weight of at least one charge transport material and about 0.01 to about 0.2 percent by weight of the surfactant.” Spec. 4, ll. 7-9.
5. Appellants’ Specification describes a specific embodiment in which commercial product GF-300 available from Toagosei Chemical Industries, a poly(fluoroacrylate)-graft-poly(methyl methacrylate) having a molecular weight of about 25,000, is selected as the poly(fluoroacrylate)-graft-poly(methyl methacrylate) surfactant. Spec. 4, ll. 3-6.
6. Yamamoto, the principal prior art reference, describes a photoreceptor for electrophotography comprising a substrate and at least one photoconductive (OPC) layer formed on the substrate and having a charge-generating function and a charge-transport function, the at least one OPC layer including a top layer containing a surfactant having a perfluoroalkyl radical. Col. 2, ll. 37-41.
7. Appellants do not contest the Examiner’s finding that Yamamoto does not limit the suitability of the perfluoroalkyl surfactant to any particular species. Ans. 11; Substitute App. Br. 9-11.
8. The Examiner found that the prior art including Yamamoto would have led one of ordinary skill in the art to reasonably expect that any known surfactant having a perfluoroalkyl radical would yield successful results. Ans. 41.

9. Yamamoto describes an embodiment of a photoreceptor comprising an aluminum substrate 10, an intermediate layer 11, a charge-generation layer 12, and a charge-transport layer 13. Col. 3, ll. 1-9; Figure 1.
10. Yamamoto teaches that a “paint to be used for forming the top charge-transport layer 13 contains a surfactant which has a perfluoroalkyl radical...” Col. 3, ll. 10-12.
11. According to Yamamoto, “[t]he paint for the top charge-transport layer is obtained by dissolving or dispersing a charge-transport agent into a solvent wherein a binder is dissolved...” Col. 3, ll. 20-22.
12. Yamamoto states that examples of the charge transport material include poly-N-vinylcarbazole and derivatives thereof, pyres-formaldehyde condensate and derivatives thereof, polysilane and derivatives thereof, oxazole derivatives, oxadiazole derivatives, monoarylamine derivatives, diaryl amine derivatives, triarylamine derivatives, stilbene derivatives, benzidine derivatives, pyrazoline derivatives, hydrozone derivatives, butadiene derivatives, or mixtures of two or more of these materials. Col. 3, ll. 24-33.
13. With respect to the binder, Yamamoto teaches resins such as polyvinyl chloride, polyvinyl acetate, polyvinylbutyral, polyester, polyurethane, polycarbonate, acrylic resin, phenolic resin, or mixtures of two or more of these resins. Col. 3, ll. 33-37.

14. As for the solvent, Yamamoto teaches the suitability of toluene, xylene, monochlorobenzene, methyl alcohol, ethyl alcohol, ethyl acetate, methylene chloride, tetrahydrofuran, cyclohexane, or combinations of two or more of these solvents. Col. 3, ll. 37-42.
15. Yamamoto teaches that the “[s]urfactant having a perfluoroalkyl radical should be added to the paint for the charge-transport layer in an amount from 0.01% to 1% by weight of a solid ingredient in the paint.” Col. 3, ll. 49-52.
16. Appellants do not dispute the Examiner’s determination that the amounts of perfluoroalkyl-containing surfactant disclosed in Yamamoto substantially overlap those specified for Appellants’ preferred ranges of amounts. Ans. 9; Substitute App. Br. 9-11.
17. Yamamoto discloses the advantages of the perfluoroalkyl surfactant as follows (col. 3, ll. 52-63):

The addition of the surfactant reduces the surface tension of the paint to thereby reduce ruggedness on the layer surface and *improves the dispersion ability of the charge-transport agent into the binder resin* to thereby increase the mechanical strength of the layer. In addition, the perfluoroalkyl radical in the surfactant allows the surfactant to exude from the charge-transport layer to the surface thereof during drying to thereby reduce the frictional resistance of the paint after drying. These effects as combined improve the abrasion resistance of the charge-transport layer 13 and suppress occurring of the flaws on the surface of the top charge-transport layer. [Emphasis added.]

18. Yamamoto states that the charge-generation layer also contains a surfactant having a perfluoroalkyl radical and that “[t]he surfactant added in the charge-generation layer has a function similar to the surfactant having a perfluoroalkyl radical added in the charge-transport layer.” Col. 3, ll. 65-67; col. 4, ll. 25-31.
19. Yamamoto does not describe the use of a poly(fluoroacrylate)-graft-poly(methyl methacrylate) surfactant as the surfactant having a perfluoroalkyl radical in the charge-transport layer.
20. Appellants do not dispute the Examiner’s factual finding that the specified poly(fluoroacrylate)-graft-poly(methyl methacrylate) surfactant is a species or sub-genus falling within Yamamoto’s disclosed genus of surfactants having a perfluoroalkyl radical. Ans. 8-15; Substitute App. Br. 9-11.
21. Yoshida, like Yamamoto, teaches an electrophotographic photosensitive member comprising an electroconductive support and a photosensitive layer containing a specified compound, wherein the photosensitive layer can be a laminate of a charge-transport layer on a charge-generating layer or a charge-generating layer on a charge-transport layer. Col. 2, l. 64 to col. 3, l. 18; col. 5, ll. 17-25; col. 6, 43-46.
22. Yoshida’s Example 1 describes the use of Arron GF-300 made by Toagosei Chemical Industry Co., Ltd. as a dispersing agent for tetrafluorethylene resin lubricant particles in the formation of a charge-transport layer. Col. 10, l. 60 to col. 7, l. 2.

23. In Yoshida's Example 1, a stilbene compound, polycarbonate, and a mixture of dichloromethane and monochlorobenzene are used as the charge transport material, the binder resin, and solvent, respectively. Col. 10, ll. 42-60.
24. Similarly, Chambers describes, in a most preferred embodiment, the use of GF-300 fluorine-containing surfactant to disperse polytetrafluorethylene (PTFE) particles in the production of a charge-transport layer additionally containing at least a polycarbonate binder, at least one charge transport material, and hydrophobic silica dispersed in at least one solvent. Col. 4, ll. 33-38; col. 6, ll. 52-62.
25. According to Chambers, "[a]ny suitable charge transport molecule known in the art may be used," including aromatic amines, and "[a]ny solvent well known in the art...may be used," including a mixture of tetrahydrofuran and toluene. Col. 5, ll. 16-40; col. 7, ll. 8-22.
26. Appellants do not dispute the Examiner's finding that Yoshida's GF-300 dispersant or Chambers's GF-300 surfactant is in fact a poly(fluoroacrylate)-graft-poly(methyl methacrylate). Ans. 12-13; Substitute App. Br. 9-11.
27. The teachings of the remaining references are either cumulative to Yamamoto, Yoshida, and Chambers or are necessary only to address limitations of claims that are not separately argued.

28. None of the references disclose the use of poly(fluoroacrylate)-graft-poly(methyl methacrylate) surfactant in a charge-transport layer *consisting* of a charge transport component, the surfactant, and a polymer binder as required by claim 1.

29. Appellants do not rely on any secondary considerations of nonobviousness, such as evidence of unexpected results.

PRINCIPLES OF LAW

“Section 103 forbids issuance of a patent when the ‘differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains.’ ” *KSR Int’l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1734 (2007). *KSR* reaffirms the analytical framework set out in *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), which mandates that an objective obviousness analysis includes: (1) determining the scope and content of the prior art; (2) ascertaining the differences between the prior art and the claims at issue; and (3) resolving the level of ordinary skill in the pertinent art. *KSR*, 127 S. Ct. at 1734. Secondary considerations such as commercial success, long felt but unsolved needs, or failure of others “‘might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.’” *Id.* (quoting *Graham*, 383 U.S. at 17-18.).

KSR states:

Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.

KSR, 127 S. Ct. at 1740-41.

KSR further instructs “that when a patent claims a structure already known in the prior art that is altered by mere substitution of one element for another known in the field, the combination must do more than yield a predictable result.” *KSR*, 127 S. Ct. at 1740.

In expressly rejecting the “obvious to try” argument in support of patentability, *KSR* states:

The same constricted analysis led the Court of Appeals to conclude, in error, that a patent claim cannot be proved obvious by merely showing that the combination of elements was “obvious to try.”...When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under § 103.

KSR, 127 S. Ct. at 1742.

ANALYSIS

In each of the Examiner's five grounds of rejection, Appellants argue the claims together. Furthermore, Appellants rely on the same arguments for all five rejections. According to Appellants, "[t]he sole issue in the appeal is whether the use of the specific poly(fluoroacrylate)-graft-poly(methyl methacrylate) surfactant is rendered obvious." Substitute App. Br. 9. We therefore confine our discussion to representative claim 1, which is common to all five rejections, and address the issue raised by Appellants' common arguments accordingly.

The Examiner's factual findings as to the scope and content of the prior art are undisputed. The Examiner found that Yamamoto differs from the subject matter of appealed claim 1 only in that the prior art reference, while describing a genus of charge-transport layer surfactants having a perfluoroalkyl radical, does not disclose the claimed poly(fluoroacrylate)-graft-poly(methyl methacrylate) species. Facts 5, 6, and 8-20. The Examiner also found, and again Appellants do not dispute, that Yamamoto does not limit the disclosed genus of surfactants having a perfluoroalkyl radical to any particular species. Fact 7. Thus, the Examiner found that the prior art would have led one of ordinary skill in the art to reasonably expect that any known surfactant having a perfluoroalkyl radical would yield successful results. Fact 8.

To resolve the difference between Yamamoto and the subject matter of claim 1, the Examiner appropriately and thoroughly considered the teachings of several other references including Yoshida and Chambers.

Facts 21-26. Both of these references teach that GF-300¹ is used as a dispersant or surfactant for PTFE particles in a charge-transport layer containing the same or similar charge transport material, polymer binder, and solvent described in Yamamoto. Facts 12-15 and 22-25.

Based on these findings, we agree with the Examiner that the teachings of the prior art establish a prima facie case of obviousness. Applying *KSR*, we find that the design need or problem to be solved in Yamamoto is to select a suitable surfactant having a perfluoroalkyl radical to disperse the charge transport material and polymer binder in a solvent to thereby increase mechanical strength. Fact 17. Hence, the dispersing function of Yamamoto's surfactant is the same or similar to that disclosed for Appellants' claimed surfactant, which is to disperse the charge transport material. Fact 3. While Yamamoto's genus of surfactants is arguably broad, it nevertheless consists of only a finite number of known perfluoroalkyl surfactants that predictably solve the dispersion problem of the charge transport agent into the binder resin. Accordingly, a person having ordinary skill in the art would have had "good reason to pursue" the use of GF-300, the claimed surfactant species. It would have been within the "technical grasp" of that person having ordinary skill in the art to understand that this known surfactant, which was readily available in commerce, has the perfluoroalkyl group as required by Yamamoto. Because that person having

¹ Appellants do not contest the Examiner's finding that the GF-300 described in Yoshida and Chambers is the same GF-300 described as a poly(fluoroacrylate)-graft-poly(methyl methacrylate) surfactant in their own Specification. Fact 26.

ordinary skill in the art would have “anticipated success” in trying GF-300 perfluoroalkyl surfactant in view of Yamamoto’s teachings, the subject matter of appealed claim 1 would have been prima facie obvious over Yamamoto alone. *KSR*, 127 S. Ct. at 1742. *See also Merck & Co., Inc. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989)(rejecting “obvious to try” argument where the prior art disclosed a “multitude of effective combinations” that did not “render any particular formulation less obvious” and where the claimed composition was “used for the identical purpose taught by the prior art.”).

Not only does the Examiner’s analysis satisfy an “obvious to try” standard, it passes muster even under a more rigorous teaching, suggestion, or motivation test. The Yoshida and Chambers references demonstrate that GF-300, i.e., the claimed poly(fluoroacrylate)-graft-poly(methyl methacrylate), yielded successful results (i.e., dispersing of materials) when used in a charge-transport layer of an imaging member chemically and structurally similar to that shown in Yamamoto. While Yoshida and Chambers teach that the GF-300 disperses PTFE particles in the charge-transport layer, GF-300 imparts an effect similar to that of the surfactant described in Yamamoto because its function is to disperse solid particles. Furthermore, the GF-300 surfactant of Yoshida or Chambers performs its dispersing function in charge transport layers that contain at least similar charge transport material, polymeric binder, and solvent as those described in Yamamoto. Thus, a person having ordinary skill in the art would have had a reasonable expectation that GF-300 would successfully perform its

dispersing function in the charge-transport layer of Yamamoto. Under these circumstances, we share the Examiner's reasoned determination that one of ordinary skill in the art would have found it obvious to use GF-300 as the perfluoroalkyl radical containing surfactant in Yamamoto's method (e.g., in lieu of Unidyne DS-401 which is a commercially available surfactant exemplified by Yamamoto) with a reasonable expectation of anticipated success. *KSR* 127 S. Ct. at 1740 (“[W]hen a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result.”).

Appellants' reliance on *In re Baird*, 16 F.3d 380, is misplaced. The *Baird* case involved a claim to a flash fusible toner comprising a bisphenol A polyester containing an aliphatic dicarboxylic acid selected from the group consisting of succinic acid, glutaric acid, and adipic acid. The prior art reference disclosed the polymeric esterification product of a dicarboxylic acid and a diphenol having a generic formula reciting a broad range of variables and thus encompassing a large number of different diphenols, one of which was bisphenol A. The claim was rejected under 35 U.S.C. § 103 over this reference, and the Board upheld the rejection. Our reviewing court, however, reversed because the prior art “appears to teach away from the selection of bisphenol A by focusing on more complex diphenols...” *In re Baird*, 16 F.3d at 382. The court instructed: “A disclosure of millions of compounds does not render obvious a claim to three compounds,

particularly when that disclosure indicates a preference leading away from the claimed compounds.” *Id.* at 383.

Here, by contrast, the prior art teachings would not have taught away from Appellants’ claimed species of poly(fluoroacrylate)-graft-poly(methyl methacrylate) surfactant. To the contrary, a person having ordinary skill in the art would have had a reasonable expectation of anticipated success. Yamamoto discloses a genus of perfluoroalkyl surfactants constituting a large but finite number of surfactants with no preference for a particular class of surfactants having a significantly more complex structure relative to Appellants’ claimed surfactant, let alone an affirmative indication that Appellants’ claimed surfactant would be unsuitable. Moreover, both Yoshida and Chambers demonstrate that the recited species (i.e., GF 300) has successfully yielded predictable results in terms of dispersing polymeric solids in charge transport layers similar to those disclosed in Yamamoto.

We expressly reject the notion that a claim reciting a species is *per se* patentable when the prior art discloses a genus encompassing a broad but finite number of known options which include the claimed species. We hold that such a *per se* approach would be contrary to the clear command of our reviewing court.² That is not to say, however, that an applicant would never be entitled to a patent in a situation as here. For example, *KSR* and *Graham*, as well as a myriad of precedents of our reviewing court, teach that secondary considerations such as unexpected results may confer

² *Cf. In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995)(“[R]eliance on *per se* rules of obviousness is legally incorrect and must cease.”).

patentability. Also, for example, patentability may be shown if the prior art teaches away from the species within the genus. But here, Appellants did not rely on any such persuasive evidence in support of nonobviousness.

Our ruling is consistent with additional legal authority. In *In re Corkill*, 771 F.2d 1496 (Fed. Cir. 1985), the claim was directed to a detergent composition comprising specified amounts of a specific zeolite (zeolite A) and specified amounts of a specific water-soluble surface-active agent. A first reference to Corey taught a detergent composition that may contain hydrated zeolites, and a second reference to Milton showed Corkill's claimed zeolite species (zeolite A). *Id.* at 1499. Corkill argued that there were many zeolites other than zeolite A and that there were "over 35 different types of zeolite framework structures and an infinite number of zeolites." *Id.* at 1500. Corkill further relied on declaration evidence asserting that it cannot be predicted how any candidate will work in a detergent composition and that testing was necessary. *Id.* Our reviewing court rejected these arguments by stating that the arguments did not "overcome Corey's teaching that hydrated zeolites will work." *Id.*

Appellants contend that neither Yoshida nor Chambers "discussed the problem of charge transport molecule crystallization" and that "[t]herefore, they do not provide the necessary teachings." Substitute App. Br. 11. We do not find this argument persuasive. Appellants' Specification informs one skilled in the relevant art that "crystallization" is related to the amount of charge transport material that can be dispersed in a binder. Fact 3. Yamamoto teaches that the surfactant having a perfluoroalkyl radical

“improves the dispersion ability of the charge-transport agent into the binder resin...” Fact 17. Thus, Yamamoto uses the perfluoroalkyl surfactant for the same or similar reason as Appellants. Appellants have not proven otherwise. Even if Appellants’ purpose for using the claimed surfactant is different from that of the prior art, this does not defeat the Examiner’s prima facie case of obviousness because any need or problem known in the field of endeavor at the time of the invention and addressed by the prior art can provide a reason for combining the elements in the manner claimed. *KSR*, 127 S. Ct. at 1742. *See also In re Kempf*, 97 F.3d 1427, 1430 (Fed. Cir. 1996) and *In re Dillon*, 919 F.2d 688, 693 (Fed. Cir. 1990)(*en banc*) (the motivation to combine the prior art references need not be identical to that of Applicants).

Appellants argue that Yoshida and Chambers teach the use of GF-300 surfactant to disperse PTFE, which is excluded by the language “consisting of” in claim 1. Substitute App. Br. 11. While it is true that Yoshida and Chambers teach the use of GF-300 to disperse PTFE, these references suggest that GF-300 is effective to disperse polymeric particles in a charge-transport layer similar to that of Yamamoto. Thus, one of ordinary skill in the art would have reasonably expected that it would impart a similar effect in terms of dispersing solid particles when used in Yamamoto. Appellants’ argument does not take into account what the collective teachings of the prior art would have suggested to one of ordinary skill in the art and is therefore ineffective to rebut the Examiner’s prima facie case of obviousness. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981)(“The test for

obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.”).

We have fully considered the other arguments advanced by Appellants in their Supplemental Appeal Brief and Reply Brief but do not find any of them to be persuasive.

CONCLUSION

On this record, Appellants have failed to show error in the Examiner’s conclusion that the claimed species is obvious over prior art which discloses a genus containing the species.

DECISION

The Examiner’s rejections of claims 1, 2, and 4-43 under 35 U.S.C. § 103 are sustained.

The Examiner’s decision 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)(1)(iv).

AFFIRMED

Appeal 2008-0601
Application 10/320,809

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