

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WOLFGANG BREMSER,
KARL-HEINZ GROSSE-BRINKHAUS and EGON WEGNER

Appeal 2008-2996
Application 10/220,164
Technology Center 1700

Decided: January 8, 2009

Before ROMULO H. DELMENDO, LINDA M. GAUDETTE, and
MICHAEL P. COLAIANNI *Administrative Patent Judges.*

GAUDETTE, *Administrative Patent Judge.*

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1, 2, and 6-16, the only claims pending in the Application. (App. Br. 2, ¶ III.) We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

Claim 1 is illustrative of the invention and is reproduced below:

1. A process for producing multicoat paint systems on electroconductive substrates by a wet-on-wet technique, comprising
 - (I) depositing a cathodically depositable electrocoat material on an electroconductive substrate to form an electrocoat film,
 - (II) applying directly to the electrocoat film at least one coating material curable thermally or both thermally and with actinic radiation so as to form a film of the at least one coating material, and then
 - (III) jointly curing the electrocoat film and the film of the at least one coating material,

wherein the cathodically depositable electrocoat material comprises an aqueous dispersion prepared by

- (1) polymerizing one or more ethylenically unsaturated monomers comprising at least 70% by weight of styrene, based on the total weight of the one or more ethylenically unsaturated monomers in
- (2) an aqueous solution of an at least partly protonated epoxy-amine adduct,
- (3) the epoxy-amine adduct being obtained by reacting
 - (A) at least one glycidyl ether of a polyphenol, containing on average at least one epoxide group per molecule,
 - (B) at least one polyglycidyl ether of a polyol, containing an average more than 1.0 epoxide group per molecule, and
 - (C) at least one compound containing a primary amino group in the molecule,

to give the epoxy-amine adduct that is free from epoxide groups, components (A) and (B) being used in an equivalents ratio of from 1.0:0.5 to 1.0:8.0, and using from 0.3 and 0.7 mol of component (C) per equivalent of epoxide groups of (A) and (B).

The Examiner relies on the following prior art references to show unpatentability:

Springer	4,007,102	Feb. 8, 1997
Erne	5,869,198	Feb. 9, 1999

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Bremser	6,201,043 B1	Mar. 13, 2001
Reiter	6,254,751 B1	Jul. 3, 2001
Bremser	WO 98/07794 A2	Sep. 26, 2001

Appellants request review of the following grounds of rejection:

1. claims 1, 2, 6-9, 11, and 13-16 under 35 U.S.C. § 103(a) as unpatentable over Springer in view of WO 98/07794 (“Bremser”)¹;
2. claims 1, 2, 6-9, 11, and 13-16 under 35 U.S.C. § 103(a) as unpatentable over Erne in view of Bremser; and
3. claims 1, 2, 6-10, 12, and 14-16 under 35 U.S.C. § 103(a) as unpatentable over Reiter in view of Bremser.

The Examiner relies on each of the primary references (i.e., Springer, Erne, and Reiter) for a disclosure of the invention as recited in claim 1 with the exception of the specifically claimed aqueous dispersion used to form the cathodically depositable electrocoat material. (Ans. 3, 5, 6.) The Examiner finds, and Appellants concede (Br. 6:1), that Bremser discloses an aqueous dispersion which is the same as Appellants’ claimed aqueous dispersion. (Br. 6:1.)

Appellants argue that one of ordinary skill in the art would not have had a reasonable expectation of success in using Bremser’s dispersion in the Springer, Erne, and Reiter processes. Appellants thus contend that the Examiner’s proposed motivation to combine the references is based on improper hindsight reasoning. (*See generally*, Br. 4-20.)

¹ All citations to “Bremser” are to U.S. 6,201,043, the English language equivalent (*see* Ans. 3, 4, and 6).

Appellants do not present separate arguments as to any particular claim, or group of claims. Accordingly, we decide all three grounds of rejection on the basis of independent claim 1.

ISSUES

Based on the contentions of the Examiner and Appellants, the first issue presented for our review with respect to each ground of rejection is:

Have Appellants shown that the Examiner reversibly erred in determining that one of ordinary skill in the art would have been motivated to use Bremser's composition in the processes for producing multicoat paint systems disclosed in the primary reference (i.e., either Springer, Erne, or Reiter)?

We answer this question in the negative as to each ground of rejection.

Appellants also rely on examples in the Specification as evidence of unexpected results. (Br. 20-21.) Therefore, taking into account the comparative examples in the Specification we also consider a second issue:

Have Appellants shown that the evidence of non-obviousness outweighs the Examiner's evidence of obviousness?

We also answer this question in the negative as to each ground of rejection.

FINDINGS OF FACT ("FF")

1. Bremser discloses aqueous dispersions and "their use for preparing electrophoretically depositable coating materials." (Col. 1, ll. 7-12.)
2. According to Bremser, "[e]lectrodeposition coating is used in particular for priming motor vehicle bodywork parts, and is generally

- operated cathodically.” (Col. 1, ll. 30-32.) Bremser teaches that “[t]he coat film is in general composed of three components: the resin component, which comes from the binder dispersion; the grinding resin component, from the pigment paste; and the pigments.” (Col. 2, 8-12.)
3. According to Bremser, coating materials prepared using the inventive dispersion adhere well to substrates as well as to top coat films. (Col. 3, ll. 23-25.) Bremser further states that use of the inventive dispersion with conventional pigments pastes does not have an adverse effect, and may even improve properties of the coat film, such as corrosion protection for the substrate. (*See* col. 3, ll. 31-40.)
 4. Bremser discloses that both the inventive dispersion and coating materials prepared from the dispersion are “very stable,” even “when comparatively large amounts of a novel dispersion are added to the electrodeposition coating material.” (Col. 3, ll. 19-23.)
 5. Springer discloses “an improved method of electrodepositing a water-soluble or water dispersible coating resin onto a conductive surface.” (Col. 1, ll. 11-13.) Springer explains that an advantage of electrocoating is that “a second or top coat can be applied over the electrocoated film without curing the electrocoated film and then both coats can be cured in one baking operation.” (Col. 1, ll. 32-36.) According to Springer, “[t]he process of the invention provides for substantially improved product quality, particularly cured coating adhesion and corrosion resistance.” (Col. 4, ll. 29-32.)
 6. Springer’s method includes a step of “electrodepositing a resinous film on [a] continuous aluminum sheet or strip” (col. 4, ll. 25-26)

- which has been “treat[ed] in an acidic aqueous solution containing hexavalent chromium, phosphate and preferably fluoride to form an amorphous chromium phosphate type conversion coating” (col. 4, ll. 19-22). According to Springer, the electrodepositing step “comprises subjecting the continuous sheet, usually as an anode, to electrolysis in an aqueous bath containing about 5-30% by weight of polyelectrolyte resin.” (Col. 4, ll. 34-37.) Appellants concede “Springer implies that either anodic or cathodic electrocoating can be employed.” (Br. 5.)
7. Erne discloses “a process for the production of multi-layer coatings, particularly motor vehicle coatings.” (Col. 1, ll. 55-57.) According to the process, an electrophoretically depositable aqueous coating medium is deposited on a substrate, followed by application of a second coating layer “wet-into-wet to the first coating layer.” (Col. 1, l. 65-col. 2, l. 4.) The two layers are stoved jointly. (Col. 2, ll. 5-6.)
 8. Erne states that “anodically or cathodically depositable electro-dip lacquers (EDLs) which are known in the art, and which are subject to no particular restriction, can be used for the production of the first coating layer, namely a primer coat.” (Col. 2, ll. 35-39.)
 9. In col. 3, ll. 6-25, Erne lists “Examples of basic resins” (l. 8) which can be used in the cathodic dip lacquers.
 10. Reiter discloses “a process for the multilayer coating of substrates with a primer coat of electrodeposition coating material and with a topcoat of powder coating material.” (Col. 1, ll. 6-9.)
 11. “Reiter discloses that ‘it is possible to use all liquid coating materials which are known in the art’ (Col. 2, lines 57-58).” (Br. 16.)

12. In col. 2, ll. 60-64, Reiter lists some “customary” (l. 59) or “possible” (l. 60) electrodeposition coating materials.

PRINCIPLES OF LAW

“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.” *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). “The obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and the explicit content of issued patents.” *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007). *See also DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1367 (Fed. Cir. 2006) (“Our suggestion test is in actuality quite flexible and not only permits, but *requires*, consideration of common knowledge and common sense”).

“For obviousness under § 103, all that is required is a reasonable expectation of success.” *In re O'Farrell*, 853 F.2d 894, 903-04 (Fed. Cir. 1988)(citations omitted). “Obviousness does not require absolute predictability.” *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed.Cir.1986).

“Case law requires that a nexus be established between the merits of the claimed invention and the evidence proffered on secondary considerations, if the evidence on secondary considerations is to be given substantial weight in the calculus of obviousness/nonobviousness.” *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 305 n.42 (Fed.

Cir. 1985). *See In re Tiffin*, 448 F.2d 791, 792 (CCPA 1971) (“[O]bjective evidence of non-obviousness must be commensurate in scope with the claims which the evidence is offered to support.”).

ANALYSIS

Appellants argue that one of ordinary skill in the art would not have had a reasonable expectation of success in using Bremser’s composition in the coating processes of the primary references because the coating art is unpredictable, and Bremser’s coating composition is not a known equivalent to the electrocoating compositions of Springer (Br. 7), Erne (Br. 11), and Reiter (Br. 18). Appellants specifically contend that: Springer is silent with regard to cathodic coating conditions and compositions (Br. 5-7; *but see* FF 6); Bremser’s coating composition is not listed among the cathodic coatings identified as suitable for use in Erne’s process (Br. 13-14 (citing Erne, col. 3, ll. 6-25); *but see* FF 9); and the claimed (i.e., Bremer’s) composition is not specifically included in Reiter’s list of suitable cathodic coatings (Br. 19 (citing Reiter, col. 2, ll. 60-64); *but see* FF 12).

We have considered Appellants’ arguments, but are not persuaded that the Examiner reversibly erred in concluding that the claimed invention would have been obvious to one of ordinary skill in the art in view of the combined teachings of Bremser and any one of Springer, Erne, and Reiter. Appellants’ arguments have been fully addressed by the Examiner’s “Response to Argument” (Ans. 7-12.) However, because Appellants’ arguments appear to be based on a misapprehension of the legal standard for an obviousness determination, we provide the following observations for the sake of completeness.

The relevant case law clearly states that an obviousness analysis properly takes into account common knowledge and common sense. Moreover, obviousness requires only a reasonable expectation of success, not absolute predictability.

Although the primary references do not explicitly identify Bremser's composition as suitable for use in their processes², Appellants have not persuasively refuted the Examiner's determination that the ordinary artisan would have nonetheless been motivated to use Bremser's composition because of its disclosed advantages, such as good adherence to substrates and top coat films (FF 3, 4) in electrodeposition coating processes for priming motor vehicle bodywork parts (FF 1, 2). (Ans. 9, 11, 12 (also noting expectation of reduced capital and operating costs).) Likewise, Appellants have not explained why it would not have been within the level of skill of the ordinary artisan to have made any necessary modifications to the explicitly disclosed processes of the primary references so as to enable the use of Bremser's cathodic coating composition.

Appellants also argue that test data provided in the Specification establishes that the claimed process provides unexpectedly superior results. (Br. 20.) The Specification compares multicoat paint systems produced using Appellants' aqueous dispersion with multicoat paint system produced using other types of aqueous dispersions. Thus, as pointed out by the Examiner (Ans. 12), the test data does not establish unexpected results when compared to the closest prior art; i.e., there is no comparison with a

² See FF 6, 8, 11 (primary references suggesting that any known electrodeposition coating materials may be utilized).

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multicoat paint system produced by the processes of the primary references using Bremser's aqueous dispersion.

CONCLUSION

Appellants have not identified reversible error in the Examiner's rejections of: claims 1, 2, 6-9, 11, and 13-16 under 35 U.S.C. § 103(a) as unpatentable over Springer in view of WO 98/07794 ("Bremser"); claims 1, 2, 6-9, 11, and 13-16 under 35 U.S.C. § 103(a) as unpatentable over Erne in view of Bremser; and claims 1, 2, 6-10, 12, and 14-16 under 35 U.S.C. § 103(a) as unpatentable over Reiter in view of Bremser.

The decision of the Examiner rejecting claims 1, 2, and 6-16 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

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