

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

*Ex parte* PETER J. SPELLANE

---

Appeal No. 1998-1573  
Application 08/599,840

---

ON BRIEF

---

Before KIMLIN, PAK and WARREN, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

*Decision on Appeal*

This is an appeal under 35 U.S.C. § 134 from the decision of the examiner finally rejecting claims 1 through 10, which are all of the claims in the application. Claim 1, as it stands of record, is illustrative of the claims on appeal:

1. In a process in which the surface of a metal article is coated with a coating layer comprising alkyl-substituted polyphenylene oxide (PPO) forming a PPO-coated article for corrosion protection of the metal, wherein the improvement comprises heat treating of the PPO-coated metal article in air to enhance the corrosion protection provided by the PPO to the metal surface in the PPO-coated metal article.

The appealed claims as represented by claim 1<sup>1</sup> are drawn to an improvement in the known process of coating a metal article with an alkyl-substituted polyphenylene oxide (PPO) which comprises at least heat treating the PPO-coated metal article in air to enhance the corrosion protection of the PPO-coated metal article, that is, “as compared to an analogous coated metal article that has not been heat treated” according to appellant (specification, page 4).

The references relied on by the examiner are:

Davis et al. (Davis)	3,455,736	Jul. 15, 1969
Whittemore et al. (Whittemore)	3,471,587	Oct. 7, 1969
Gay et al. (Gay)	5,271,891	Dec. 21, 1993

The examiner has advanced the following grounds of rejection on appeal:

claims 1 through 10 stand rejected under 35 U.S.C. § 103 as being unpatentable over Whittemore;

claims 1 through 4 and 6 through 10 stand rejected under 35 U.S.C. § 103 as being unpatentable over Gay;

claim 5 stands rejected under 35 U.S.C. § 103 as being unpatentable over Gay further in view of Davis; and

claims 1 through 3 and 6 through 10 stand rejected under 35 U.S.C. § 103 as being unpatentable over the admitted state of the art in appellant’s specification.

While we affirm the examiner's decision refusing to allow the claims based on Whittemore because we agree with the examiner's conclusion that the claimed subject matter would have been obvious over this reference, we designate our affirmance as involving a new ground of rejection pursuant to 37 CFR § 1.196(b) (1997) since our reliance on Whittemore materially differs from that of the examiner as set forth below, as to which appellant has not had an opportunity to respond. *See In re Eynde*, 480 F.2d 1364, 1370-71, 178 USPQ 470, 474-75 (CCPA 1973).

We reverse all of the other grounds of rejection.

Rather than reiterate the respective positions advanced by the examiner and appellant, we refer to the examiner’s answer and to appellant’s brief for a complete exposition thereof.

#### *Opinion*

---

<sup>1</sup> Appellant state in their brief (page 3) that “all of the appealed claims stand or fall together.” Thus, we decide this appeal based on appealed claim 1. 37 CFR § 1.192(c)(7) (1995).

As an initial matter, we must interpret claim 1, giving the terms thereof the broadest reasonable interpretation in light of the specification as it would be interpreted by one of ordinary skill in this art. *See generally, In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997). We interpret claim 1 to be a “Jepson” type claim which is an implied admission by appellant that processes of coating a metal article with an alkyl-substituted polyphenylene oxide as set forth in the preamble of this claim were known. We find no disclosure in appellant’s specification which indicates that such a process, other than the modification thereof with respect to heat treating the alkyl-substituted polyphenylene oxide coated metal article in air to enhance the corrosion protection of this coated metal article as claimed, is appellant’s own work. *See generally, Pentec, Inc. v. Graphic Controls Corp.*, 776 F.2d 309, 315, 227 USPQ 766, 770 (Fed. Cir. 1985); *In re Fout*, 675 F.2d 297, 299-301, 213 USPQ 532, 535-36 (CCPA 1982); *In re Ehrreich*, 590 F.2d 902, 909-10, 200 USPQ 504, 510 (CCPA 1979). The transitional term “comprising” opens the improvement to any additional steps and materials. *See, e.g., In re Baxter*, 656 F.2d 679, 686-87, 210 USPQ 795, 802-03 (CCPA 1981).

We further interpret the language “heat treating of the [alkyl-substituted polyphenylene oxide]-coated metal article in air to enhance the corrosion protection provided by the [alkyl-substituted polyphenylene oxide] to the metal surface in the [alkyl-substituted polyphenylene oxide ]-coated metal article” in light of the specification to require heating the alkyl-substituted polyphenylene oxide-coated metal article in air at any temperature and any period of time necessary to obtain at least a measurable improvement in “the corrosion resistance of the coated article as compared to an analogous coated metal article that has not been heat treated” (specification, page 4). We find no basis in the record on which a specific limitation with respect to the time and/or temperature of the “heating” step can be read into claim 1 (see specification, sentence bridging pages 4-5). *In re Priest*, 582 F.2d 33, 37, 199 USPQ 11, 15 (CCPA 1978), *citing In re Prater*, 415 F.2d 1393, 1405, 162 USPQ 541, 551 (CCPA 1969) (“We have consistently held that no ‘applicant should have limitations of the specification read into a claim where no express statement of the limitation is included in the claim.’”).

The known processes of coating metal articles with alkyl-substituted polyphenylene oxide, including poly(2,6-dimethyl-1,4-phenylene oxide), are acknowledged in appellant’s specification to include processes in which additional materials can be included with alkyl-substituted polyphenylene

oxide and the metal surface treated prior to the application of the alkyl-substituted polyphenylene oxide (specification, page 2, lines 7-25; see also pages 1-2), which processes would be encompassed by the recitation in the preamble of claim 1. The acknowledged processes “known in the prior art to coat metal surfaces with various phenylene oxide polymers to form coatings which provide some degree of corrosion protection to the metal surfaces” include those that use unsubstituted polyphenylene oxide (*id.*, pages 1-2).

We find that Whittemore discloses spraying unsubstituted polyphenylene oxide onto the surface of aluminum plates, drying the coated aluminum plates at 120° C. and baking the coated article at 285° C. for about ½ hour (col. 7, lines 42-51), and further discloses in Example 8 thereof a similar process in which an unprimed polished aluminum panel is sprayed with unsubstituted polyphenylene oxide in a halobenzene solvent, air drying the coated article at 120° C. and baking the coated article at 315° C. for about ½ hour. We further find that one of ordinary skill in this art would have recognized from the data that is reported in the accompanying tables (cols. 7 and 10) that the purpose of the baking step is to harden the surface of the unsubstituted polyphenylene oxide coated surface.

In comparing the knowledge in the prior art with the claimed process of appealed claim 1, we determine that, *prima facie*, one of ordinary skill in this art armed with the knowledge that metal articles can be coated with unsubstituted polyphenylene oxide as well as alkyl- substituted polyphenylene oxide would have found in the teachings of Whittemore the reasonable suggestion to air dry an alkyl-substituted polyphenylene oxide coated metal article at 120° C. and then baking the coated article at between 285° C. or 315° C. for about ½ hour in the reasonable expectation of obtaining a hardened surface. Indeed, one of ordinary skill in this art would have reasonably expected an alkyl-substituted polyphenylene oxide, particularly methyl substituted polyphenylene oxide, to exhibit the same or similar properties as a metal coating as unsubstituted polyphenylene oxide. *Cf. In re Zickendraht*, 319 F.2d 225, 228, 138 USPQ 22, 24-25 (CCPA 1963) (“[I]t is the closeness of . . . [the structural relationship], a question of fact, which is indicative of the obviousness or unobviousness of the new compound); *In re Lohr*, 317 F.2d 388, 389 &n.2, 137 USPQ 548, 549 &n.2 (CCPA 1963) (“The important fact is that there is present here a close structural similarity, whether or not the compounds are adjacent homologs.”). With respect to the limitation in appealed claim 1 that the surface of the coated

metal article must be heated to the extent necessary to increase the corrosion resistance of the coated metal article, it reasonably appears to us that a hardened surface would be more corrosion resistant than a softer metal surface in the absence of evidence to the contrary.

Thus, we are of the opinion that, *prima facie*, the knowledge in the art, as established above, combined with the teachings of Whittemore set forth above would have reasonably suggested the claimed process encompassed by claim 1, including all of the limitations thereof, to one of ordinary skill in this art at the time the claimed invention was made.

Accordingly, in view of the *prima facie* case of obviousness established above, the burden of going forward has shifted to appellant to submit argument and/or evidence in rebuttal. *See generally, In re Johnson*, 747 F.2d 1456, 1460, 223 USPQ 1260, 1263 (Fed. Cir. 1984); *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984).

We have again evaluated all of the evidence of obviousness and nonobviousness based on the record as a whole, giving due consideration to the weight of appellant's arguments as they pertain to the ground of rejection set forth above. Appellant has recognized that Whittemore does teach heating a metal article coated with "conventional PPO," that is, unsubstituted polyphenylene oxide, as set forth above, but contends that the reference "completely skips over the possibility that an alkyl-substituted PPO material could be used instead of its mandatory fluorinated-substituted PPO resin" (brief, page 5 n.2). Thus, appellant submits that Whittemore did not appreciate the claimed invention and therefore the "PTO cannot rely upon such unappreciated inherency to support obviousness" (*id.*). We cannot agree with appellant's position.

The issue here is whether the one of ordinary skill in this art would have applied the process of hardening the surface of unsubstituted polyphenylene oxide coated metal articles shown in Whittemore to alkyl-substituted polyphenylene oxide coated metal articles that were known in the art as recognized in the preamble to appealed claim 1, in order to harden the so coated metal surface, and not one of inherency in the sense that appellant intends. Appellant has couched the extent of heating that must be employed in the claimed process in the requirement that the coated metal article must be heated to the extent that the corrosion resistance of the coated metal is increased. Appellant's choice of claim language to describe their claimed process alone is not sufficient to patentably distinguish the claimed

invention over the knowledge in the art acknowledged by appellant in styling the claim and as shown in Whittemore. *In re Skoner*, 517 F.2d 947, 950, 186 USPQ 80, 82 (CCPA 1975). (“Appellants have chosen to describe their invention in terms of certain physical characteristics . . . . Merely choosing to describe their invention in this manner does not render patentable their method which is clearly obvious in view of [the reference]. [Citation omitted.]”); *cf. In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990) (“It is a general rule that merely discovering and claiming a new benefit of an *old* process cannot render the process again patentable. [Citations omitted.]”).

The extent to which inherency is considered here is whether the process of Whittemore applied to alkyl-, particularly methyl-, substituted polyphenylene oxide coated metal articles would heat that article to the extent that the corrosion resistance thereof is inherently increased. *Skoner*, 517 F.2d 947 at 950-51, 186 USPQ at 82-83. We expressed above the view that that a hardened surface would reasonably appear to be more corrosion resistant than a softer metal surface in the absence of evidence to the contrary. *See id.*

Accordingly, having considered appellant’s arguments of record as they pertain to the new ground of rejection which we have applied above, we remain of the opinion that the claimed invention encompassed by the appealed claims is *prima facie* obvious over Whittemore. Thus, the burden of going forward with respect to this ground of rejection remains with appellant. *See Johnson, supra; Piasecki, supra.*

With respect to the remaining grounds of rejection maintained on appeal by the examiner, we have carefully reviewed the record and based thereon find ourselves in agreement with appellant that these grounds cannot be sustained. While we agree with the examiner that one of ordinary skill in this art would have been motivated to use an alkyl-substituted polyphenylene oxide in place of an unsubstituted polyphenylene oxide in the process of Gay for essentially the reasons we stated above, on this record, we cannot determine whether the heating of the coating on the metal particles which occurs as the metal particles are recirculating during the coating process (e.g., col. 3, lines 45-56, and col. 5, line 16, to col. 6, line 31) would inherently increase the corrosion resistance of the coated articles. *See Skoner*, 517 F.2d 947 at 950-51, 186 USPQ at 82-83. Thus, we reverse the two grounds of rejection based on Gay. Finally, with respect to the ground of rejection based on the admitted state of

the art in appellant's application and as admitted in the preamble of claim 1, we find that the examiner has not explained and supported the position that "almost all coating methods which apply resins [sic] coatings require elevated temperatures" vis-à-vis the claimed process encompassed by claim 1, and thus we reverse this ground of rejection. *See generally, In re Rouffet*, 149 F.3d 1350, 1358, 47 USPQ2d 1453, 1458 (Fed. Cir. 1998) ("hindsight" is inferred when the specific understanding or principal within the knowledge of one of ordinary skill in the art leading to the modification of the prior art in order to arrive at appellant's claimed invention has not been explained).

We have denominated our affirmance of the examiner's ground of rejection over Whittemore as a new ground of rejection under 37 CFR § 1.196(b) (1997) and have reversed all other grounds of rejection.

The examiner's decision is affirmed.

This decision contains a new ground of rejection pursuant to 37 CFR § 1.196(b)(amended effective Dec. 1, 1997, by final rule notice, 62 Fed. Reg. 53,131, 53,197 (Oct. 10, 1997), 1203 Off. Gaz. Pat. & Trademark Office 63, 122 (Oct. 21, 1997)). 37 CFR § 1.196(b) provides that, "A new ground of rejection shall not be considered final for purposes of judicial review."

37 CFR § 1.196(b) also provides that the appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of proceedings (§ 1.197(c)) as to the rejected claims:

(1) Submit an appropriate amendment of the claims so rejected or a showing of facts relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the application will be remanded to the examiner. . . .

(2) Request that the application be reheard under § 1.197(b) by the Board of Patent Appeals and Interferences upon the same record. . . .

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

Appeal No. 1998-1573  
Application 08/599,840

*AFFIRMED*  
*37 CFR § 1.196(b)*

EDWARD C. KIMLIN	)	
Administrative Patent Judge	)	
	)	BOARD OF PATENT
	)	APPEALS AND
	)	INTERFERENCES
CHARLES F. WARREN	)	
Administrative Patent Judge	)	

Pak, *Administrative Patent Judge*, Concurring:

I agree with my colleagues in this case. However, I respectfully offer the following additional comments.

The claimed subject matter is directed to a process for coating the surface of a metal article with a coating layer comprising alkyl-substituted polyphenylene oxide. See claim 1. The novelty of the invention lies in heat-treating the alkyl-substituted polyphenylene oxide coated metal article in air to enhance the corrosion protection. *Id.* According to the specification, the claimed heat treatment is to enhance the adhesion of the coating to the metal article. See, e.g., page 4. When the adhesion of the coating of the metal article is enhanced, the corrosion resistance of the coated metal article naturally follows. *Id.* A[T]he heat treatment can range anywhere from above **about** room temperature up to about 200 °C (emphasis mine).@ See page 5.

Claim 1 is written in Jepson format. Thus, the subject matter recited in the preamble of claim 1 is impliedly admitted to be old in the art. *In re Ehrreich*, 590 F.2d 902, 909, 200 USPQ 504, 510 (CCPA 1979); *In re Aldrich*, 398 F.2d 855, 857, 158 USPQ 311, 312 (CCPA 1968). In other words, it is known to coat the surface of a metal article with a coating layer comprising alkyl-substituted polyphenylene oxide. What is allegedly not known is the subsequent claimed heat treatment.<sup>2</sup> However, I find that Whittemore recognizes the importance of insuring good adhesion between a coating layer and a substrate. See column 4, lines 68-71. I find that Whittemore teaches coating a polyphenylene oxide on metal articles and then drying and baking at 120 °C and about 280 °C, respectively or 120 °C and about 315 °C, respectively. See column 7, lines 42-60. column 9, line 46 to column 10, line 27.

Given these teachings, I agree with my colleagues that one of ordinary skill in the art would have been led to the claimed heat-treatment of the alkyl-substituted polyphenylene oxide coated metal article, motivated by a desire to improve adhesion and hardness of the coating. This is especially true in the present situation since the claimed heat-treatment embraces conventional air drying, which is necessary for removing solvent from the wet coating on a metal article resulting from a conventional solution coating technique. One of ordinary skill in the art would have had a reasonable expectation that

structurally similar chemicals, such as polyphenylene oxide and methyl-substituted polyphenylene oxide, would have imparted the same or substantially the same properties after the claimed heat-treatment. *In re Lamberti*, 545 F.2d 747, 751, 192 USPQ 278, 281 (CCPA 1976); *Zickendraht*, 319 F.2d at 228, 138 USPQ at 24-25

In reaching this conclusion, we recognize that Whittemore does not mention improving corrosion resistance as recited in the appealed claims. However, corrosion resistance is another advantage, which admittedly naturally results from good adhesion. This additional advantage, therefore, would have naturally flowed from the suggestion of Whittemore. *Skoner* 517 F.2d at 950, 186 USPQ at 83 (explaining that unpatentable subject matter does not become patentable merely through the employment of descriptive language not chosen by the prior art); *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Int. 1985)(holding that the recognition of another advantage flowing naturally from following the suggestion of the prior art cannot be the basis for patentability when the difference would otherwise be obvious). .

The fact that Whittemore teaches halide alkyl-substituted polyphenylene oxide coatings adhering well to a metal article after heating further supports obviousness. When both halide alkyl-substituted polyphenylene oxide and polyphenylene oxide coatings adhered well to a metal article after heating, one of ordinary skill in the art would have reasonably expected that an alkyl (inclusive of methyl)-substituted polyphenylene oxide coating likewise would adhere well to a metal article after heating. One of ordinary skill in the art would have interpolated from these teachings that heating, especially at least conventional drying, is necessary and useful for improving adhesion and hardness of the alkyl-substituted polyphenylene oxide coating.

CHUNG K. PAK  
Administrative Patent Judge

) BOARD OF PATENT  
) APPEALS AND

---

<sup>2</sup> The claimed heat treatment includes conventional air drying which is normally used to drive off solvent in a liquid coating after an article is coated.

Appeal No. 1998-1573  
Application 08/599,840

) INTERFERENCES

Richard P. Fennelly  
Akzo Nobel Inc  
Patent and Trademark Department  
7 Livingstone Avenue  
Dodds Ferry NY 10522-3401