

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte HENRY R. SCHWARTZ

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Appeal No. 2003-1941  
Application No. 09/981,100

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HEARD: February 03, 2004

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Before GARRIS, WALTZ and KRATZ, Administrative Patent Judges.  
KRATZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-10, which are all of the claims pending in this application.

BACKGROUND

Appellant's invention relates to a method for bonding metal components after alkali solution washing and water washing steps, each component having a surface with an oxide layer. The method may be used for forming a hollow fan blade. An understanding of the invention can be derived from a reading of exemplary claim 1, which is reproduced below.

1. A method for bonding metal components, comprising the steps of:
  - providing metal components to be bonded together at contacting surfaces, said contacting surfaces having an oxide layer;
  - washing said components with an alkali solution to provide alkali-washed components having said oxide layer at said surfaces;
  - washing said alkali-washed components with water to provide water-washed components having said oxide layer at said surfaces; and
  - bonding said components together at said surfaces.

In addition to alleged admitted prior art (APA) set forth at pages 1 and 2 of appellant's specification and figure 1 of the drawings, the prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Porter et al. (Porter)	5,063,662	Nov. 12, 1991
Groll	6,427,904	Aug. 06, 2002 (PCT filed Jan. 29, 1999)

Claims 1-3 and 8-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over APA in view of Groll. Claims 4-7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over APA in view of Groll and Porter.

We refer to the brief and reply brief and to the answer for a complete exposition of the opposing viewpoints expressed by appellant and the examiner concerning the issues before us on this appeal.

#### OPINION

Upon consideration of the respective positions advanced by appellant and the examiner with respect to the rejections that are before us for review, we find ourselves in agreement with appellant's position in that the examiner has failed to carry the burden of establishing a prima facie case of obviousness. See In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); In re Piasecki, 745 F.2d 1468, 1471-1472, 223 USPQ 785, 787-788 (Fed. Cir. 1984). Accordingly, we will not sustain any of the examiner's stated rejections.

The examiner basically acknowledges (and appellant agrees) that the applied APA does not disclose that an oxide layer is maintained on the metal component surfaces that are bonded

together (answer, page 3).<sup>1</sup> Indeed, at page 1 of appellant's specification, the applied APA describes the use of a pickling step involving an acid wash to backstrip or remove oxides from the surface of components that are to be bonded together to form a fan blade.

In an attempt at remedying the acknowledged deficiency in the teachings of the applied APA relative to the here claimed subject matter, the examiner additionally relies on Groll.<sup>2</sup> Groll discloses a bonding method for making articles, such as cookware or electrical conductors, wherein a thin layer of aluminum is applied to a surface of at least one of two dissimilar metals that are to be joined together. The examiner refers to lines 30-37 of column 2 of Groll, wherein Groll discloses that:

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<sup>1</sup> In other words, the examiner takes the position in the rejection advanced in the answer that the applied APA removes all of the oxide layer prior to the washing and bonding steps. Indeed, if this were not the case, the APA would appear to represent an anticipatory disclosure of the subject matter of at least claim 1. Moreover, appellant has not disagreed with that interpretation of the APA by the examiner. See, e.g., the last sentence of the first full paragraph at page 5 of the brief.

<sup>2</sup> While the examiner adds Porter to Groll and the APA in a separate rejection of dependent claims 4-7, the examiner has not explained how Porter would make up for the above-noted difference in the method of independent claim 1 and the APA.

[t]hus, pure aluminum is a beneficial bonding agent for bonding dissimilar metals wherein one or both of the metal sheets or plates to be joined contain a ductile oxide surface. Certain metals, such as, for example, stainless steel and pure or EC (electrical grade) aluminum contain brittle oxide surfaces and do not require an aluminum coating layer to be applied prior to pressure bonding.

Based on that disclosure of Groll, the examiner (answer, page 4) asserts that:

[i]t would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method of AAPA so as to include the step of bonding metal parts having oxide layer on the respective surfaces, in a similar manner as taught in Groll, in order to provide a more efficient bond therebetween [sic] the two bonding parts thus reduc[ing] the overall manufacturing cost and to lessen environment[al] impact by not using an acid back strip.

As explained by appellant (brief, pages 5-7 and reply brief, pages 2 and 3), Groll is directed to the bonding of dissimilar metals using a pure aluminum surface layer on at least one of the mating surfaces, the pure aluminum functioning as a bonding agent. Also, the APA, unlike Groll, is particularly directed to a conventional method for forming a hollow fan blade wherein the oxide coating of the mating surfaces of the components to be bonded is removed so that a bond quality that is acceptable for that purpose can be obtained.

Appellant relates that the conventional wisdom associated with the applied APA is that the component surface oxide layer(s) are removed since "[t]his oxide coating is conventionally believed to interfere with obtaining a good bond ..."

(appellant's specification, page 1, third paragraph, lines 6-9).

Given that state of the art, as reported by appellant in the application specification, the examiner has not fairly explained why one of ordinary skill in the art would have been led to modify the APA based upon the teachings of Groll in a manner so as to leave an oxide surface layer on the components to be bonded despite the conventional thinking of one of ordinary skill in the art, as discussed above and in appellant's specification. This is especially so since the examiner has not convincingly addressed how the teachings of Groll with regard to using pure aluminum in the bonding of dissimilar metals in forming cookware and electrical contacts would have furnished one of ordinary skill in the art with both a suggestion and a reasonable expectation of success in achieving a good bond for the hollow fan blade product contemplated by the APA while leaving oxides on the mating surfaces of the components.

Rejections based on § 103(a) must rest on a factual basis with these facts being interpreted without hindsight

reconstruction of the invention from the prior art. See In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 177 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968). Our reviewing court has repeatedly cautioned against employing hindsight by using the appellant's disclosure as a blueprint to reconstruct the claimed invention from the isolated teachings of the prior art. See, e.g., Grain Processing Corp. v. American Maize-Products Co., 840 F.2d 902, 907, 5 USPQ2d 1788, 1792 (Fed. Cir. 1988).

From our perspective, the examiner's rejections appear to be premised on impermissible hindsight reasoning. On the record of this appeal, it is our view that the examiner has not carried the burden of establishing a prima facie case of obviousness with respect to the subject matter defined by the appealed claims.

Accordingly, we reverse the stated rejections.

CONCLUSION

The decision of the examiner to reject claims 1-3 and 8-10 under 35 U.S.C. § 103(a) as being unpatentable over APA in view of Groll and to reject claims 4-7 under 35 U.S.C. § 103(a) as being unpatentable over APA in view of Groll and Porter is reversed.

REVERSED

BRADLEY R. GARRIS	)	
Administrative Patent Judge	)	
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	)	
	)	
	)	BOARD OF PATENT
THOMAS A. WALTZ	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
	)	
	)	
PETER F. KRATZ	)	
Administrative Patent Judge	)	

PFK/sld

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GREGORY P. LAPOINTE  
BACHMAN & LEPOINTE, P.C.  
SUITE 1201  
900 CHAPEL STREET  
NEW HAVEN, CT 06510-2802