UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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*Ex parte* DAVID K. KACZYNSKI,
JIMMY C. CHAN and MARTIN S. DAY

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Appeal 2008-0170
Application 10/943,518
Technology Center 3600

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Decided: March 25, 2008

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Before WILLIAM F. PATE III, MURRIEL E. CRAWFORD, and JOSEPH A. FISCHETTI, Administrative *Patent Judges*.

WILLIAM F. PATE III, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

This is an appeal from the final rejection of claims 1-26. These are the only claims in the application.

We have jurisdiction over the appeal pursuant to 35 U.S.C. §§ 134 and 6.

The claimed invention is directed to an aircraft wheel rotor drive key, a method for increasing the wear resistance and corrosion resistance of the drive key, and a method for repairing such a drive key.

Claim 1 reproduced below, is further illustrative of the claimed subject matter.

> 1. An aircraft wheel rotor drive key comprising an elongate steel body portion including side portions for engaging a rotor insert, wherein said side portions are coated with a tungsten-carbide cobalt composition to provide wear resistance and said body portion is coated with a ceramic-metallic coating composition.

The references of record relied upon by the examiner as evidence of obviousness are:

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| Mosser | US 4,537,632 | Aug. 27, 1985 |
| Detwiler | US 5,931,269 | Aug. 3, 1999 |

Claims 1-26 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Detwiler in view of Mosser.

OPINION

We have carefully reviewed the rejection on appeal in light of the arguments of the Appellants and the Examiner. As a result of this review, we have reached the determination that the applied prior art establishes the prima facie obviousness of claims 1-24. The rejection of these claims is affirmed. The applied prior art does not establish the prima facie

obviousness of claims 25 and 26. The rejection of these claims is reversed. Our reasons follow.

FINDINGS OF FACT

The following are our findings of fact with respect to the scope and content of the prior art and the differences between the prior art and the claimed subject matter.

1. Detwiler discloses an aircraft wheel rotor drive key comprising an elongated steel body portion with side portions 18 formed of tungsten carbide and coated by thermal spraying with an electroless nickel plating solution. See col. 2, l. 34 - col. 3, l. 6.
2. Mosser, on the other hand, is directed to a ceramic-metallic coating composition which is particularly erosion, corrosion, and abrasion resistant, and of high resistance to environmental conditions. See col. 1, ll. 5-10. The coating is suitable for various components of turbine engines such as compressors, disks, vanes, shafts, blades, metal parts of complex geometry and design, such as nuts, screws, fasteners, springs, and for general use for mating parts. It can be used on toothed wheels or bolt threads. See col. 8, ll. 25-53. While it is advantageous to coat metal parts, it can also be used on non-metal parts such as ceramics, plastics and other substances. See col. 12, ll. 13-15. Note that it is particularly advantageous to use such coatings in the aerospace industry. See col. 12, l. 18. It is noted from the examples cited in the patent, that the coating can provide good protection in the ASTM B117 salt spray test when it is used to coat steel and alloy steel. See col. 9, ll. 3-19.

3. Accordingly, in summary, it can be seen that Mosser discloses a composition for coating steel parts, including steel parts of complex shapes, and including parts that include non-metallic areas such as ceramics, plastics and other substrates in the aerospace industry.

PRINCIPLES OF LAW

A claimed invention is unpatentable if the differences between it 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." 35 U.S.C. § 103(a) (2000); *KSR Int'l v. Teleflex Inc*., 127 S.Ct. 1727 (2007); *Graham v. John Deere Co*., 383 U.S. 1, 13-14 (1966).

In *Graham*, the Court held that that the obviousness analysis is bottomed on several basic factual inquiries: "[(1)] the scope and content of the prior art are to be determined; [(2)] differences between the prior art and the claims at issue are to be ascertained; and [(3)] the level of ordinary skill in the pertinent art resolved." 383 U.S. at 17. *See also KSR Int'l v. Teleflex Inc*. at 1734. "The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *Id*, at 1739.

While there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness, "the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *KSR* at 1741.

> When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

*Id.*, at 1740. We must ask whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id.*

Appellant argues that there is no teaching, suggestion, or motivation (TSM) for the combination of references. However, in *KSR* the Supreme Court held that a rigid application of such a mandatory formula as TSM was incompatible with its precedent concerning obviousness. See *KSR* at 1741.

In KSR the Supreme Court stated in relation to the applicable prior art that it is error to look only to the problem the patentee was trying to solve. According to the Court, "[t]he Court of Appeals failed to recognize that the problem motivating the patentee may be only one of many addressed by the patent's subject matter. The question is not whether the combination was obvious to the patentee but whether the combination was obvious to a person with ordinary skill in the art. Under the correct analysis, any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed."

"The second error of the Court of Appeals lay in its assumption that a person of ordinary skill attempting to solve a problem will be led only to those elements of prior art designed to solve the same problem. … Common sense teaches, however, that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle." *KSR* at 1742.

After all, "[a] person of ordinary skill is also a person of ordinary creativity, not an automaton." *Id.*

ANALYSIS

In view of the disclosure of Mosser, as to the suitability of his ceramic-metallic coating composition for use in corrosion protection for aerospace parts, it would have been obvious to coat the prior art Detwiler aircraft wheel rotor drive key, inasmuch as this is simply combining prior art elements according to known methods to yield predictable results. Stated another way, this is a simple substitution of one suitable corrosion protective composition, that is, the ceramic-metallic coating disclosed in Mosser, for the nickel-based coating disclosed in Detwiler. This simple substitution is merely the substitution of one known coating for another and would have yielded predictable results.

Appellants argue that there is no teaching, suggestion or motivation to suggest that the combination would be beneficial or desirable. Note that in *KSR* however, the Supreme Court held that a rigid application of such a

mandatory formula as teaching, suggestion or motivation, was incompatible with its precedent concerning obviousness.

Next, the Appellants attack the Examiner's combination of references as based on a *per se* rule, that is, a design choice. While we do not endorse *per se* rules, in this instance, it can be seen that the rejection is not based on a *per se* rule, but in fact is bottomed on the predictable nature of Mosser when used on the aerospace part of Detwiler. Furthermore, there is no requirement that the coating of Mosser, when applied to the rotor key of Detwiler be better or maximize the corrosion resistance. Thus, the use of Mosser on the rotor key of Detwiler would have been entirely predictable to one of ordinary skill.

Once again, on pages 5 and 6 of the brief, Appellants argue about motivation to combine. We find this argument unconvincing based on the Supreme Court's holding in *KSR*.

We note further that in the Reply Brief, Appellants state that Mosser is not in the field of endeavor of the Detwiler rotor key. As noted above in our quotation from *KSR*, the Supreme Court appears to have expanded the field of analogous art. Finally, we note that speculation by Appellants and the Examiner as to the cost of possible coatings is simply irrelevant with respect to our holding of obviousness with respect to claims 1-24.

Turning to the rejection of claims 25 and 26, we are in agreement with Appellants that the applied prior art does not teach the additional step of mounting the steel member on the aircraft wheel and repairing minor damage to the coating while it is on the aircraft wheel. Likewise, the prior art does not suggest the additional step of removing the steel member from

the aircraft wheel to repair minor damage to the ceramic coating. The cited prior art is simply silent with respect to these steps, and we find the Examiner's reasons for rejecting these claims to be based on speculation and assumption. Speculation and assumptions cannot bottom a rejection under § 103.

CONCLUSION

The rejection of claims 1-24 under 35 USC §103 is affirmed. The rejection of claims 25 and 26 under 35 USC § 103 is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

AFFIRMED-IN-PART

vsh

HONEYWELL INTERNATIONAL INC.
101 COLUMBIA ROAD
P O BOX 2245
MORRISTOWN NJ 07962-2245