

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ALFRED S. GALES, JR.,
EDWARD J. OLES, KENT L. REINER,
WILLIAM M. ALEXANDER, IV,
and JEAN-PIERRE GENAIN

Appeal 2008-4622
Application 11/233,852
Technology Center 1700

Decided: November 18, 2008

Before EDWARD C. KIMLIN, CATHERINE Q. TIMM, and
JEFFREY T. SMITH, *Administrative Patent Judges*.

KIMLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 40-73. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b).

Claim 40 is illustrative:

40. A coated cutting tool for removing material from a workpiece in a material removal operation wherein the coated tool engages the workpiece at a selected depth of cut, the cutting tool comprising:

a body, the body containing a pocket;

an uncoated polycrystalline cubic boron nitride blank having a rake surface and a cutting edge, and a leg extending away from the cutting edge;

the uncoated polycrystalline cubic boron nitride blank being brazed into the pocket using a braze alloy whereby there is a braze joint between the body and the uncoated polycrystalline cubic boron nitride blank;

the braze joint being located a distance away from the rake surface of the polycrystalline cubic boron nitride blank ranging between about 1.5 millimeters and about 4.9 millimeters and the leg having a length that is at least about 1.7 times as great as the depth of cut; and

a coating applied to the uncoated polycrystalline cubic boron nitride blank brazed into the pocket.

The Examiner relies upon the following references as evidence of obviousness:

Nakai	5,037,704	Aug. 6, 1991
Thysell	6,090,476	July 18, 2000

Brochure on Brazing Alloys, Semi-Alloys, *Semialloy Brazing Alloys*, July 1968. (Semialloy)

Appellants' claimed invention is directed to a coated cutting tool. The cutting tool comprises a body containing a pocket and an uncoated polycrystalline cubic boron nitride blank brazed into the pocket, resulting in a brazed joint between the body of the tool and the uncoated boron nitride blank. A coating is applied to the uncoated boron nitride blank that is brazed into the pocket.

Appealed claims 40-52 and 60-68 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Nakai in view of Semialloy. Claims 53-59 and 69-73 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the stated combination of references further in view of Thysell.

Appellants present separate, substantive arguments only for claims 45 and 67, as a group, claims 56 and 70 as a group, and claims 59 and 73 as a group. Accordingly, claims 40-44, 46-52, 60-66, and 68 stand or fall together, as do claims 53-55, 57, 58, 69, 71 and 72.

We have thoroughly reviewed each of Appellants' arguments for patentability. However, we are in complete agreement with the Examiner that the claimed subject matter would have been obvious to one of ordinary skill in the art within the meaning of § 103 in view of the applied prior art. Accordingly, we will sustain the Examiner's rejections for the reasons set forth in the Answer, which we incorporate herein, and we add the following for emphasis only.

There is no dispute that Nakai discloses, like Appellants, a coated cutting tool for removing material from a workpiece comprising a body containing a pocket, a boron nitride blank brazed into the pocket using a braze alloy, and a coating applied to the boron nitride blank that is brazed into the pocket. As recognized by the Examiner and emphasized by Appellants, Nakai does not provide an **uncoated** boron nitride blank brazed into the pocket of the cutting tool's body. Rather, Nakai provides a thin coating on the boron nitride blank consisting of carbides, carbonitrides and nitrides of silicon and other elements for the purpose of achieving a strongly brazed tool that is free from the occurrence of cracks. However, we agree

with the Examiner that Nakai's provision of the thin coating does not require a conclusion of nonobviousness for the presently claimed subject matter.

As explained by the Examiner, Nakai clearly recognizes that it was known in the art to make cutting tools like Appellants that are free of a coating on the boron nitride blank that is brazed into the pocket of the cutting tool. Nakai describes certain disadvantages of not using a coating on the brazed surface of the boron nitride blank at columns 1 and 2 of the patent. Consequently, rather than providing a teaching away from using an uncoated blank at the brazed area, as urged by Appellants, we fully concur with the Examiner that one of ordinary skill in the art would have found it obvious to eliminate the coating of Nakai for preparing a cutting tool of the prior art discussed by Nakai, with the reasonable expectation of not achieving the benefits of the coating espoused by Nakai. It is by now well settled that the omission of a feature disclosed by the prior art along with its attendant function or advantage is a matter of obviousness for one of ordinary skill in the art. *In re Thompson*, 545 F.2d 1290, 1294 (CCPA 1976); *In re Kuhle*, 526 F.2d 553, 555 (CCPA 1975); *In re Marzocchi*, 456 F.2d 790, 793 (CCPA 1972); *In re Larson*, 340 F.2d 965, 969 (CCPA 1965); *In re Keegan*, 331 F.2d 315, 319 (CCPA 1964); *In re Porter*, 68 F.2d 971, 973 (CCPA 1934). In the present case, Appellants have advanced no argument, let alone the requisite objective evidence, that eschewing the coating of Nakai results in anything other than the disadvantages discussed by Nakai. Nor have Appellants demonstrated that they may eliminate the coating of Nakai and still produce a comparable cutting tool.

Regarding separately argued claims 45 and 67, which recite a brazed alloy comprising gold, nickel and palladium, the Examiner properly points

out that Appellants' Specification discloses that such a braze alloy was known in the art at the time of filing the present application, and we find no error in the Examiner's legal conclusion that it would have been obvious for one of ordinary skill in art to use a known braze alloy in preparing the cutting tool of Nakai. Appellants' argument with respect to the unpredictability of the effectiveness of a braze alloy is not supported by factual evidence.

Turning to the rejection to claims 53-59 and 69-73 over the additional disclosure of Thysell, we agree with the Examiner that "it would have been obvious to one of ordinary skill in the art to have formed coating layers such as the multilayer coatings of Thysell on the compact containing the brazed blank in order to provide the compact with the desirable properties such as enhanced adhesion, wear resistance and chemical stability" (Ans. 7, last sentence). Appellants' argument that Thysell does not use a braze alloy misses the thrust of the Examiner's rejection which cites Nakai for using a braze alloy.

Concerning Appellants' separate arguments for claim 56 which recites a coating layer of titanium aluminum oxycarbonitride, and claim 59 which recites a coating layer of titanium aluminum nitride, we agree with the Examiner that Thysell evidences the obviousness of these coating compositions by teaching that "the coating may be selected from compositions comprising a metal, oxygen, carbon and nitrogen (col. 3, ln. 51-55)." (Ans. 8, second para.). We observe that Thysell expressly teaches that the coating may comprise combinations of any number of layers of compositions comprising a metal, nitrogen, carbon and oxygen where the metal may be titanium and aluminum (col. 3, ll. 51 et seq.). We note that

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Appellants attach no criticality to the use of the specifically recited oxycarbonitride and titanium aluminum nitride.

As a final point, we note that Appellants base no argument upon objective evidence of nonobviousness, such as unexpected results, which would serve to rebut the inference of obviousness established by the Examiner.

In conclusion, based on the foregoing and the reasons well stated by the Examiner, the Examiner's decision rejecting the appealed claims 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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