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for publication and is not binding precedent of the Board.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. 26

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte MASAO YOSHIKAWA and TAKEHISA MINOWA

Appeal No. 2002-1808
Application No. 09/028,059

ON BRIEF

Before ABRAMS, CRAWFORD, and BAHR, Administrative Patent Judges.
CRAWFORD, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 and 3 to 9, which are all of the claims pending in this application. Claim 2 has been canceled.

The appellants' invention relates to an abrasive-bladed or in particular, to a diamond-bladed multiple cutting wheel assembly (specification, p. 1). A copy of the claims under appeal is set forth in the appendix to the appellants' brief.

THE PRIOR ART

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Sawluk	3,898,772	Aug. 12, 1975
Miller	4,457,113	Jul. 03, 1984
Corcoran, Jr. et al. (Corcoran)	5,313,742	May 24, 1994

THE REJECTION

Claims 1 and 3 to 9 stand rejected under 35 U.S.C. § 103 as being unpatentable over Corcoran in view of Miller and Sawluk.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejections, we make reference to the answer (Paper No. 21, mailed June 11, 2001) for the examiner's complete reasoning in support of the rejections, and to the brief (Paper No. 20, filed April 4, 2001) and reply brief (Paper No. 23, filed August 10, 2001) for the appellants' arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art references, and to the respective positions articulated by the appellants and the examiner. As a consequence of our review, we make the determinations which follow.

The examiner has rejected claims 1 and 3 to 9 under 35 U.S.C. § 103. We initially note that in rejecting claims under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a prima facie case of obviousness. See In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). A prima facie case of obviousness is established by presenting evidence that the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the references before him to make the proposed combination or other modification. See In re Lintner, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972). Furthermore, the conclusion that the claimed subject matter is prima facie obvious must be supported by evidence, as shown by some objective teaching in the prior art or by knowledge generally available to one of ordinary skill in the art that would have led that individual to combine the relevant teachings of the references to arrive at the claimed invention. See In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Rejections based on § 103 must rest on a factual basis with these facts being interpreted without hindsight reconstruction of the invention from the prior art. The examiner may not, because of doubt that the invention is patentable, resort to speculation, unfounded assumption or hindsight reconstruction to supply deficiencies in the factual basis for the rejection. 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 appellants' 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).

In support of the rejection, the examiner finds:

> Corcoran Jr. et al disclose an abrasive bladed cutting wheel (1, 5) comprising: a shaft . . . for rotation; an abrasive cutting wheel having a hole in the center (see fig. 2) and an abrasive layer of diamond particles (col. 1, lines 61-62) bonded to the outer periphery of the wheel; the wheel has a specific range for an outer diameter and a thickness; and at least two abrasive cutting wheels (figs. 1 and 4); at least one spacer (2,6). [answer at page 3].

The examiner recognizes that Corcoran does not disclose that the wheel has a Young's modulus in the range of 45,000-70,000 kgf/mm^2 or that the wheel is made from tungsten carbide cemented with cobalt. However, the examiner takes Official Notice that cementing a wheel with tungsten carbide with cobalt is well known in the art as disclosed in Miller and Sawluk and concludes:

> . . . [it] is a matter of design and thus it would have been obvious to one of ordinary skill in the art at the time the invention was made [and to consider] all the different design choices and make a choice of cutting material depending on the material of the workpiece to be cut. . . . the Young's modulus number is inherent in the wheel as all hard materials posses[s] a Young's modulus. The Young's modulus will be determined by varying percentages of the

> tungsten carbide and cobalt, and thus it is not inventive to discover the optimum or workable ranges by routine experimentation when general conditions are disclosed in the prior art. [answer at pages 3 to 4].

The specification discloses that:

> It is essential that the base wheel 1 made from a cemented metal carbide has a Young's modulus in the range from 45000 to 70000 kgf/mm^2 . . . When the Young's modulus of the base wheel 1 is too low, the base wheel 1 is subject to occurrence of warping and undulation by the resistance force received during the cutting works with the multiple cutting wheel assembly so that the advantage of decreasing the thickness of the base wheel to be obtained by the use of a cemented metal carbide is lost. When the Young's modulus of the base wheel exceeds the above mentioned upper limit, on the other hand, such a high Young's modulus is necessarily accompanied by an increase of brittleness so that the base wheel may be subject to cracking and breaking during cutting works to cause a great danger (pages 11 to 12).

The examiner argues that the choice of a particular Young's modulus is a matter of design choice depending on the workpiece to be cut. We do not agree. Appellants' specification clearly teaches that the choice of the Young's modulus solves certain problems as such the recited Young's modulus cannot be considered a matter of design choice. See In re Kuhle, 526 F.2d 553, 555, 188 USPQ 7, 9 (CCPA 1975).

The test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art. See In re Young, 927 F.2d 588, 591,

18 USPQ2d 1089, 1091 (Fed. Cir. 1991) and In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). As there is no teaching or suggestion for a grinding wheel with the Young's modulus recited in the claims, we will not sustain the rejection of claim 1 or claims 3 through 9 dependent thereon.

The decision of the examiner is reversed.

REVERSED

NEAL E. ABRAMS Administrative Patent Judge	)
MURRIEL E. CRAWFORD Administrative Patent Judge	) BOARD OF PATENT) APPEALS) AND) INTERFERENCES
JENNIFER D. BAHR Administrative Patent Judge	)

mec/vsh

DOUGHERTY & TROXELL
5205 LEESBURG PIKE
SUITE 1404
FALLS CHURCH, VA 22041