

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. 12

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DANIEL RALPH PETRAK

Appeal No. 2000-1850
Application 09/098,822

ON BRIEF

Before WARREN, JEFFREY T. SMITH and NAGUMO, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

Decision on Appeal and Opinion

We have carefully considered the record in this appeal under 35 U.S.C. § 134, including the opposing views of the examiner, in the answer, and appellant, in the brief, and based on our review, find that we cannot sustain the rejection of appealed claims 1 through 19,¹ all of the claims in the application, under 35 U.S.C. § 103 as being unpatentable over Petrak et al. (Petrak) in view of Moore et al. (Moore).²

It is well settled that “[t]he consistent criterion for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that [the claimed process] should be carried out and would have a reasonable likelihood of success viewed in light

¹ See the amendment of May 18, 1999 (Paper No. 4) and pages 16 through 18 of the specification.

of the prior art. [Citations omitted] Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure." *In re Dow Chem. Co.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988). Thus, a *prima facie* case of obviousness is established by showing that some objective teaching, suggestion or motivation in the applied prior art taken as a whole and/or knowledge generally available to one of ordinary skill in the art would have led that person to the claimed invention as a whole, including each and every limitation of the claims, without recourse to the teachings in appellant's disclosure. *See generally, In re Rouffet*, 149 F.3d 1350, 1358, 47 USPQ2d 1453, 1458 (Fed. Cir. 1998); *Pro-Mold and Tool Co. v. Great Lakes Plastics Inc.*, 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1629-30 (Fed. Cir. 1996); *B.F. Goodrich Co. v. Aircraft Braking Sys. Corp.*, 72 F.3d 1577, 1582, 37 USPQ2d 1314, 1318 (Fed. Cir. 1996) ("When obviousness is based on a particular prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference. [Citation omitted.] This suggestion or motivation need not be expressly stated. [Citation omitted.]"); *In re Fine*, 837 F.2d 1071, 1074-76, 5 USPQ2d 1596, 1598-1600 (Fed. Cir. 1988); *Dow Chem.*, 837 F.2d at 473, 5 USPQ2d at 1531-32.

As an initial matter, we find that, when considered in light of the written description in the specification as interpreted by one of ordinary skill in this art, *see, e.g., In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997), the plain language of appealed claim 1 requires "heating the cured shape to a temperature in the range of greater than 1450°C to 1800°C for a time effective to convert the ceramic matrix precursor into a *crystal containing ceramic*" (emphasis supplied). Appellant has set forth in the written description in the specification that "[b]y 'crystal containing' it is meant that *the matrix is comprised of phases of beta silicon carbide and optionally beta silicon nitride* where said phases are not the result of any fillers in the ceramic matrix precursor" (page 6, lines 1-4; emphasis supplied). Accordingly, we must interpret the term "crystal containing" in claim 1 in the manner that appellant has defined it. *See Morris, supra* ("[T]he PTO applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or

² Answer, pages 4-5.

otherwise that may be afforded by the written description contained in the applicant's specification."); *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) ("During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow. When the applicant states the meaning that the claim terms are intended to have, the claims are examined with that meaning, in order to achieve a complete exploration of the applicant's invention and its relation to the prior art. *See In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969) (before the application is granted, there is no reason to read into the claim the limitations of the specification).")

When the claim so interpreted is compared with Petrak, it is apparent that the dispositive issue in this appeal is whether this reference would have led one of ordinary skill in this art to heat a cured shape comprised of the ceramic matrix precursor of Petrak and the interfacial coated crystalline silicon carbide non-oxide fibers of Moore to a temperature of greater than 1450°C to 1800°C for a time effective to convert the ceramic matrix precursor into a ceramic matrix composite comprised of phases of beta silicon carbide and optionally beta silicon nitride. The examiner, without reference to supporting evidence, contends that the "[d]etermination of the specification heating temperatures would have been well within the realm or routine experimentation to one having ordinary skill in the art at the time of the invention" because "[t]hese parameters would have obviously been selected to optimize the process conditions and/or the properties of the final product" (answer, page 5). Appellant submits that Petrak discloses that "polymer ceramification is carried out at a temperature in the range of at least 1000°C, preferably 1200°" and "does not teach the conversion of the ceramic matrix precursor into a crystal containing ceramic" (brief, pages 4 and 5). The examiner responds that Petrak discloses "converting the preceramic polymer to a ceramic" which "would produce a crystalline material," alleging, without supporting reference, that "[c]eramic is defined as a material which is crystalline or partially crystalline." We could not find a definition of "ceramic" in chemical and general scientific dictionaries that support the definition that the examiner assigns to the term.

We, like appellant, find no objective teaching, suggestion or motivation in Petrak, alone or in combination with Moore, or any other evidence in the record, which would have led one of

ordinary skill in this art to even consider experimentation, routine or not, at the temperature range specified in appealed claim 1 for any purpose, and particularly for the purpose of achieving “a crystal containing ceramic” as defined in claim 1. *See In re Sebek*, 465 F.2d 904, 907, 175 USPQ 93, 95 (CCPA 1972) (“Where, as here, the prior art disclosure suggests the outer limits of the range of suitable values, and that the optimum resides within that range, and where there are indications elsewhere that in fact the optimum should be sought within that range, the determination of optimum values outside that range may not be obvious.”).

No knowledge in the prior art other than Petrak has been identified by the examiner with respect to the allegation of “routine experimentation,” and the basis for the alleged definition of “ceramic” is not apparent. Thus, on this record, the only direction to the claimed invention resides in appellant’s specification. *See Rouffet, supra* (“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); *cf. Ex parte Levengood*, 28 USPQ2d 1300, 1301-02 (Bd. Pat. App. & Int. 1993) (“At best, the examiner’s comments regarding obviousness amount to an assertion that one of ordinary skill in the relevant art would have been able to arrive at appellant’s invention because he had the necessary skills to carry out the requisite process steps. This is an inappropriate standard for obviousness. . . . That which is within the capabilities of one skilled in the art is not synonymous with obviousness. *Ex parte Gerlach*, 212 USPQ 471 (Bd. App. 1980).”).

The examiner's decision is reversed.

Reversed

CHARLES F. WARREN
Administrative Patent Judge

JEFFREY T. SMITH
Administrative Patent Judge

MARK NAGUMO
Administrative Patent Judge

)
)
)
)
)
) BOARD OF PATENT
) APPEALS AND
) INTERFERENCES
)
)
)
)

Appeal No. 2000-1850
Application 09/098,822

Dow Corning Corporation CO1232
2200 W. Salzburg Road
PO Box 994
Midland, MI 48686-0994