

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

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MERIE L. BELL and DANIEL P. BAGLEY

Appeal No. 2006-0672
Application No. 10/112,176

ON BRIEF

Before WALTZ, TIMM, and JEFFREY T. SMITH, Administrative Patent Judges.

WALTZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the primary examiner's final rejection of claims 1 through 28, which are the only claims pending in this application. We have jurisdiction pursuant to 35 U.S.C. § 134.

According to appellants, the invention is directed to a method of manufacturing an electrical connector for use in a downhole tool, including placing a dielectric body around a conductor to form an electrical connector where the dielectric body is composed of a polyetherketoneketone (PEKK) or a derivative of a PEKK (Brief, page 2).

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Claim 1 on appeal is illustrative of the invention and a copy of this claim is reproduced below:

1. A method of manufacturing an electrical connector for use in a downhole tool, the method comprising placing a dielectric body around a conductor, thereby forming an electrical connector, wherein the dielectric body comprises a composition, and the composition comprises a polyetherketoneketone or a derivative of a polyetherketoneketone.

The examiner has relied upon the following references as evidence of obviousness:

Gay et al. (Gay)	4,816,556	Mar. 28, 1989
Moss et al. (Moss)	5,049,340	Sep. 17, 1991
Denninger	5,554,042	Sep. 10, 1996

Claims 1, 2, 4-6, 13, 18-23 and 25-26 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Denninger in view of Moss (Answer, page 3). Claims 3, 7-12, 14-17, 24 and 27-28 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Denninger in view of Moss and Gay (Answer, page 4). Based on the totality of the record, we *affirm* both rejections on appeal essentially for the reasons stated in the Answer as well as those reasons set forth below.

OPINION

Since Moss specifically states that the PEKK resins of his invention are the same as those claimed in Gay (Moss, col. 2, ll. 49-51; Answer, page 4), we will consider the two rejections on appeal together and discuss the combined disclosures and teachings

of Denninger, Moss and Gay.

The examiner finds that Denninger discloses electrical conductors embedded in a dielectric material to form an electrical connector which has the ability to withstand severe environments (Answer, page 3). The examiner finds that Denninger teaches the use of polyetheretherketone (PEEK) as a dielectric molding material but does not mention the use of PEKK (Answer, page 4).¹ Therefore the examiner applies Moss for the disclosure of PEKK materials within the scope of the claims on appeal, with the accompanying teaching that these materials have dielectric characteristics for use in electronic applications, as well as improved strength and temperature resistance (Answer, page 4). From these findings, the examiner concludes that it would have been obvious to one of ordinary skill in the art at the time of appellants' invention to use the PEKK materials of Moss as the dielectric material in the electrical connector system of Denninger "to form connectors having improved temperature resistance" (*id.*).

The examiner cites Gay for the teaching of using conventional fillers and polymer blends with PEKK materials to improve temperature resistance, crack resistance, and moldability (Answer, pages 4-5). From these findings, the examiner concludes that it would have been obvious to use the fillers and polymer blends of Gay in the articles of

¹Appellants admit that it was known in the art to form electrical connectors for use in downhole tools by molding PEEK around the conductors to completely isolate the conductor (specification, pages 2-3, ¶[0010]). Appellants also admit that polyetherketone (PEK) has been used for the same purpose as the similar PEEK (specification, page 3, ¶[0011]).

Denninger and Moss to form electrical connectors with improved temperature resistance, crack resistance and moldability (Answer, page 5).

Appellants argue that Denninger is more concerned with the novel physical configuration of his connectors, and thus the materials used to fabricate the connector are “less relevant” and not the “focus” of the Denninger disclosure (Brief, page 5). Appellants further argue that Denninger provides a list of numerous materials for use in the connector body, and each has different physical and chemical characteristics (*id.*).

Appellants’ arguments are not persuasive. Denninger specifically discloses PEEK as one of seven listed rigid, non-conductive thermoplastics, reinforced or unreinforced, that can be used as a dielectric body that insulates and surrounds conductor materials (col. 7, ll. 7-10). Furthermore, as discussed above, appellants admit that the use of PEEK as a dielectric body with embedded conductors was well known in the art (specification, pages 2-3, ¶¶[0010]).² Denninger also teaches that the dielectric material includes, but is not limited to, the seven listed materials (col. 7, ll. 7-10). Denninger further teaches that it was well within the ordinary skill in this art to select dielectric materials to “optimize resistance to temperature extremes and nuclear,

²It is axiomatic that admitted prior art in an applicant’s specification may be used in determining the patentability of a claimed invention (*In re Nomiya*, 509 F.2d 566, 570-71, 184 USPQ 607, 611-12 (CCPA 1975)); and that consideration of the prior art cited by the examiner may include consideration of the admitted prior art found in an applicant’s specification (*In re Davis*, 305 F.2d 501, 503, 134 USPQ 256, 258 (CCPA 1962); *cf.*, *In re Hedges*, 783 F.2d 1038, 1039-40, 228 USPQ 685, 686 (Fed. Cir. 1986)).

biological, chemical (NBC) attack and moisture resistance,” with an example selected to have high strength and thermal stability (col. 7, ll. 55-65). Accordingly, the selection of an optimum dielectric material to achieve desired properties in the connector body of Denninger would have been well within the ordinary skill in this art.

Appellants argue that the Denninger connectors are not for use in a downhole tool or for use in an environment similar to that present in an oil well (Brief, page 5). As correctly noted by the examiner (Answer, pages 5-6), the recitation of an intended use (“for use in a downhole tool”), as found in claim 1 on appeal, does not distinguish the method claimed from the method of Denninger, as modified by Moss and Gay. See *In re Paulsen*, 30 F.3d 1475, 1479, 31 USPQ2d 1671, 1673-74 (Fed. Cir. 1994)(preamble does not limit scope of claim if it merely states the invention’s purpose or intended use, but terms appearing in preamble may be deemed limitations if they give meaning to claim and properly define invention). We also adopt the examiner’s comments regarding the severe environment contemplated by Denninger for his electrical connector (Answer, page 6; see Denninger, col. 1, ll. 24-29, and col. 7, ll. 59-65)).

Appellants argue that Moss is silent on the use of PEKK film in specific configurations for use as dielectrics, the use of the film as a dielectric in a connector, or the use of the film as a dielectric in a downhole tool (Brief, page 6). Appellants also argue that no use of the Gay invention as a dielectric body on an electrical connector for

use in a downhole tool is taught or suggested (Brief, page 9).

Appellants' arguments are not persuasive. Moss specifically discloses that ordered PEKKs are "more suitable in manufacturing because of their better melt processing characteristics" (col. 1, ll. 36-45). Moss also teaches that PEKK films are useful as dielectrics (col. 4, ll. 54-62) and are preferred for applications requiring higher temperature resistance, post-casting annealing to achieve higher strength and stiffness, or greater toughness, the very properties desired by Denninger (Moss, col. 5, ll. 38-49). Gay, directed to the same PEKKs as Moss (see Moss, col. 2, ll. 49-51), discloses that it was well known to use PEKK films as "insulation wrapping for electrical conductors" (col. 1, ll. 59-62).³ Gay further teaches that PEKKs have "good retention of properties at elevated temperatures, have good solvent stress crack resistance and can be rapidly molded," as well as forming completely miscible blends with certain polyetherimides (col. 3, ll. 5-11).

Appellants argue that Denninger and Moss do not teach or suggest all the

³In the event of continuing or further prosecution of this application, the examiner and appellants should consider the patentability of the claimed subject matter in view of Angelo, U.S. Patent No. 3,674,627, issued July 4, 1972, as cited by Gay at col. 1, ll. 59-62.

elements of the invention (Brief, page 7). Appellants also argue that there is no disclosure of molding the PEKK to form the film or other article (*id.*). Appellants argue that there is no motivation to make the combination proposed by the examiner, and there is no teaching regarding the use of the film as a component in an electrical connector (*id.*).

Appellants' arguments are not well taken. As discussed above, Denninger, Moss and Gay teach all of the claimed limitations. Furthermore, the step of molding is not required by claim 1 on appeal, nor does the intended use render the claim patentable as also discussed above. Finally, we note that Gay discloses the use of PEKK film as an insulator for electrical conductors was well known, and the motivation to combine the references as proposed by the examiner is to improve the temperature stability, strength, resistance to cracking, and moldability, as taught by Moss (col. 1, ll. 42-45; col. 5, ll. 38-49) and Gay (col. 3, ll. 5-11), and as suggested by Denninger (col. 7, ll. 55-65).

With regard to claims 4, 6, 20 and 25, appellants argue that the combination of references do not teach/suggest molding the dielectric body around the pin (Brief, page 8). With regard to claim 5, appellants argue that the combination of references do not teach/suggest a post-mold annealing step (*id.*).

These arguments are also not persuasive. As noted by the examiner (Answer, page 7), Moss teaches an annealing step to achieve films of high strength and stiffness

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(see Moss, col. 5, ll. 41-45). We also note that Gay teaches annealing of PEKK samples (col. 5, ll. 38-40; see Example 8, col. 14, ll. 3-7). Denninger specifically teaches that the pins **68** may be placed in a die mold to be embedded as a molding material is formed into the dielectric body **30** (col. 7, ll. 14-16).

For the foregoing reasons and those stated in the Answer, we determine that the examiner has established a prima facie case of obviousness in view of the reference evidence. Based on the totality of the record, including due consideration of appellants' arguments, we determine that the preponderance of evidence weighs most heavily in favor of obviousness within the meaning of section 103(a). Therefore we affirm both rejections on appeal.

The decision of the examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(iv)(2004).

AFFIRMED

