The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 40

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JEROME H. LEMELSON

Appeal No. 2003-0545
Application No. 08/436,096

HEARD: MAY 20, 2003

Before GROSS, LEVY, and BLANKENSHIP, Administrative Patent Judges.
LEVY, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1, 4-8, 10, 11, and 13-20.

BACKGROUND

Appellant's invention relates to a superconducting electrical cable. An understanding of the invention can be

derived from a reading of exemplary claim 1[1], which is reproduced as follows:

1. A superconducting electrical cable comprising:

a. an elongated, flexible, solid light-conducting substrate formed of at least one strand of a uniform material having a substantially constant cross section along its length;

b. an outer stratum of said substrate being formed of electrically insulating material;

c. a first layer of superconducting material completely surrounding said substrate immediately outside said outer stratum and integrally secured to said substrate;

d. a second layer of insulating material immediately outside, completely surrounding, and secured to said first layer; and

e. said substrate supporting said superconducting material and providing major tensile strength for said superconducting electrical cable.

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

Middleton et al. (Middleton)	1,698,704	Jan. 8, 1929
Snowden et al. (Snowden)	3,612,742	Oct. 12, 1971
Sakurai (Japanese Published Patent Application)	JP 56-4101	Jan. 17, 1981

[1] As noted by the examiner (answer, page 3) the appendix to the brief does not include a correct copy of the claims. We observe that the claims, as listed in the appendix, do not include all of the amendments to the claims made by appellant in "Amendment F" (Paper No. 25, filed September 14, 1998). We rely upon the correct copy of the appealed claims appended to the examiner's answer.

Jin et al. “High Tc superconductors-composite wire fabrication” Appl. Phys. Lett. vol. 51, No. 3 (July 20, 1987) pp. 203-204.

Claims 1, 4-8, and 15-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Snowden in view of Sakurai.

Claims 10, 13, and 14 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Snowden in view of Sakurai and further in view of Middleton.

Claim 11 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Snowden in view of Sakurai and further in view of Jin.

Rather than reiterate the conflicting viewpoints advanced by the examiner and appellant regarding the above-noted rejections, we make reference to the examiner's answer (Paper No. 31, mailed August 29, 2000) for the examiner's complete reasoning in support of the rejections, and to appellant's brief (Paper No. 30, filed May 16, 2000) and reply brief (Paper No. 32, filed November 2, 2000) for appellant's arguments thereagainst. Only those arguments actually made by appellant have been considered in this decision. Arguments which appellant could have made but chose not to make in the brief have not been considered. See 37 CFR 1.192(a).

OPINION

In reaching our decision in this appeal, we have carefully considered the subject matter on appeal, the rejections advanced by the examiner, and the evidence of obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, appellant's arguments set forth in the briefs along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the invention as set forth in the claims. Accordingly, we reverse.

We begin with the rejection of claims 1, 4-8, and 15-20 under 35 U.S.C. § 103(a) as being unpatentable over Snowden in view of Sakurai.

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the

examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole. See id.; In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir.

1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976). The examiner's position (answer, page 4) is that Snowden discloses all of the features claimed except for the substrate being a light-conducting substrate. To overcome this deficiency of Snowden, the examiner turns to Sakurai for a teaching of the use of an optical fiber with an electrical conductor to transmit both electrical energy and optical signals. In the examiner's opinion, it would have been obvious to modify Snowden's line by adopting the teaching of Sakurai to transmit both electrical energy and optical signals.

Appellant asserts (brief, page 3) that the examiner fails to provide motivation to combine the teachings of a superconducting line of Snowden with the simple electrical cable of Sakurai. It is further argued (brief, pages 4 and 5) that the references teach away from the combination because Snowden teaches that the superconducting materials need to be surrounded by materials having a high degree of thermal and electrical conductivity with an electrically conductive core, whereas appellant's invention requires that the core has an outer stratum that is electrically insulative.

We find that in Snowden, core layer 70 has high conductivity as well as high thermal conductivity (col.4, lines 15-20). As shown in figure 5, superconducting layer 68 is formed of layers 80 of superconducting material, interspaced with layers 82 which "may be a material of normal conductive or insulative properties" (col. 4, lines 60-67). Although the innermost layer 82 of superconducting layer 66 abuts core layer 70, layer 82 is formed on the outside of layer 70 and is not formed as an electrically insulating material on an outer stratum of elongated wire-like layer 70, as required by claim 1. In addition, we find that Sakurai[2] is directed to a fiber optic cable that is comprised of an optical fiber 1 surrounded by a conductive layer 7, which in turn is encased in plastic jacket 8 (figure 2 and translation, page 2). From the disclosure of Snowden relating to a superconductive wire, and the teaching of Sakurai relating to a nonsuperconducting cable, we find no teaching or suggestion that would have motivated an artisan to combine the teachings of the two references in order to provide Snowden with a light conducting inner layer or core, as advanced by the examiner. In addition, because Snowden teaches that the inner core be a

[2] We rely upon the translation provided by the PTO. A copy of the translation accompanies the decision.

conducting layer, we find no suggestion to replace the conducting layer of Snowden with a light conducting layer which is inherently an insulator. We are not persuaded by the examiner's argument (answer, page 5) that the motivation to combine Snowden and Sakurai comes from the fact that both references deal with an electric cable. In view of Snowden's teaching that the inner core should be made of a conductor with high thermal conductivity, we find no suggestion, and none has been provided by the examiner, that would have taught or suggested to an artisan that the conducting core of Snowden be replaced by a light-conducting cable, other than from the teachings of appellant's disclosure. The Federal Circuit has stated that "[the] mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." In re Fritch, 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992), citing In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). "Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor." Para-Ordnance Mfg. v. SGS Importers Int'l, 73 F.3d at 1087, 37 USPQ2d at 1239 (Fed. Cir. 1995), citing W. L. Gore & Assocs., v. Garlock, Inc.,

721 F.2d at 1551, 1553, 220 USPQ at 311, 312-13 (Fed. Cir. 1983). From all of the above, we find that the examiner has failed to establish a prima facie case of obviousness of claims 1, 4-8, and 15-20. Accordingly, the rejection of claims 1, 4-8, and 15-20 under 35 U.S.C. § 103(a) is reversed.

We turn next to the rejection of claims 10, 13, and 14 under 35 U.S.C. § 103(a) as unpatentable over Snowden in view of Sakurai and further in view of Middleton. We reverse the rejection of claims 10, 13, and 14 because Middleton does not make up for the deficiencies of the basic combination of Snowden and Sakurai.

We turn next to the rejection of claim 11 under 35 U.S.C. § 103(a) as unpatentable over Snowden in view of Sakurai and further in view of Jin. We reverse the rejection of claim 11 as Jin does not make up for the basic deficiencies of Snowden and Sakurai. Accordingly, the rejection of claim 11 under 35 U.S.C. § 103(a) is reversed.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1, 4-8, 10, 11, and 13-20 under 35 U.S.C. § 103 is reversed.

REVERSED

ANITA PELLMAN GROSS Administrative Patent Judge	)	
STUART S. LEVY Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
HOWARD B. BLANKENSHIP Administrative Patent Judge	)	

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