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PAT.&T.M. OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

This opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT D. LORENTZ
and JOSEPH H. SEXTON

Appeal No. 95-2362
Application No. 07/904,835¹

ON BRIEF

Before ABRAMS and FRANKFORT, Administrative Patent Judges and
CRAWFORD, Acting Administrative Patent Judge.

FRANKFORT, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 15 through 18 and 20 through 22, which are all of the claims remaining in this application. Claims 1 through 14 and 19 have been canceled.

¹ Application for patent filed June 26, 1992.

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Appellants' invention relates to a method of forming shielding used in, or on portions of, a sputter deposition apparatus so as to reduce impurities in a coating deposited on a substrate sputtered using the apparatus. Claims 15 and 16 are representative of the subject matter on appeal and a copy of those claims, as they appear in the Appendix to appellants' brief, is attached to this decision.

The prior art references of record relied upon by the examiner in rejecting the appealed claims under 35 U.S.C. § 103 are:

Grosewald et al. (Grosewald)	3,879,278	Apr. 22, 1975
Sawada et al. (Sawada)	5,135,629	Aug. 4, 1992 (filed June 8, 1990)
Sasaki (Japanese '257)	63-83257	Apr. 13, 1988
Umezaki (Japanese '082)	53-99082	Aug. 30, 1978

Argana et al. (Argana), "RF Sputter Deposition of Y-BA-CU-O Superconducting Thin Films From an Oxide Powder Target", American Vacuum Society Topical Conference of High Temperature Superconductors, Nov. 1987.

Claims 15 through 18 and 20 through 22 stand rejected under 35 U.S.C. § 103 as being unpatentable over Sawada, Japanese '257 or Japanese '082 in view of Grosewald or Argana.

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Reference is made to the examiner's answer (Paper No. 15, mailed June 27, 1994) for the examiner's complete reasoning in support of the above-noted rejection. Appellants' arguments thereagainst are found in the brief (Paper No. 14, filed April 29, 1994) and in the reply brief (Paper No. 16, filed August 1, 1994).

OPINION

In reaching our conclusion on the obviousness issues raised in this appeal, we have carefully considered appellants' specification and claims, the applied prior art, and the respective viewpoints advanced by appellants and the examiner. As a consequence of our review, we have made the determination that the examiner's rejection of the appealed claims under 35 U.S.C. § 103 cannot be sustained. Our reasons follow.

As appellants have pointed out in both their brief and reply brief, and as recognized by the examiner, independent claims 15 and 20 on appeal require combining (presumably at ambient room temperature) a volatile suspending liquid, a binder and the selected shielding material to form a slurry; applying the slurry

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to a shielding surface, or a target-supporting surface, in a sputter deposition apparatus; and

"drying the slurry by evaporating the volatile suspending liquid at a temperature at least as low as the temperature at which the combining step was performed, thereby forming a shield for reducing impurities deposited in a coating on a substrate during a sputter deposition process" (emphasis added).

Dependent claims 16 and 21 specifically require that the drying of the slurry be performed at ambient temperature.

While we might agree with the examiner that from the combined teachings of the applied references it would have been obvious to one of ordinary skill in the art to have used a slurry like that of Grosewald or Argana in a sputter deposition apparatus (e.g., Sawada, Japanese '257 or Japanese '082) as both the target material and as a shielding material, we note (as appellants have) that the slurries of both Grosewald and Argana are dried at elevated temperatures (i.e., 110°C in Grosewald and 100°C in Argana), while the combining of the constituents of the slurry in both of these references takes place at what the examiner concedes (answer, page 5) is ambient room temperature. Thus, the clear teachings of the references themselves is contrary to what is 'required in appellants' claims on appeal,

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since the drying temperature of the slurry to drive off the volatiles is significantly higher than the temperature at which the combining step is performed.

The examiner's position is that drying of the slurry at ambient temperature is "considered to be obvious over the prior art..." (answer, pages 5-6). We find such conclusion to be without any factual basis in the applied references, and to be grounded totally on speculation and conjecture on the examiner's part. As appellants have noted in their brief and reply brief, it is contrary to the teachings of both Grosewald and Argana to perform the drying step at ambient room temperature. The examiner's belief that the disclosure of Grosewald at column 4, lines 3-10 provides support for the examiner's conclusion of obviousness is mistaken when such disclosure is viewed in light of the entire teachings of the Grosewald patent, particularly, Examples I, II, and III found in columns 5 and 6.

In the present case, the examiner's speculation about what might have been obvious to one of ordinary skill in the art without evidence in support thereof is not a basis upon which the legal conclusion of obviousness may be reached. Lacking any

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teachings in the prior art itself which would appear to have suggested the claimed subject matter to a person of ordinary skill in the art, or any viable line of reasoning from the examiner as to why such artisan would have otherwise found the claimed subject matter to have been obvious in light of the teachings of the references, we must refuse to sustain the examiner's rejection of claims 15 through 18 and 20 through 22 under 35 U.S.C. § 103 based on the applied references.

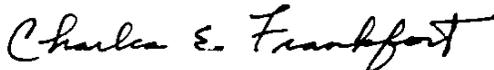
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The decision of the examiner rejecting claims 15 through 18
and 20 through 22 under 35 U.S.C. § 103 is, accordingly,
reversed.

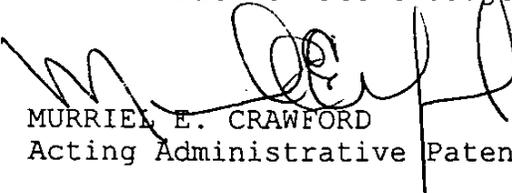
REVERSED



NEAL E. ABRAMS
Administrative Patent Judge



CHARLES E. FRANKFORT
Administrative Patent Judge



MURRIEL E. CRAWFORD
Acting Administrative Patent Judge

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APPENDIX

15. A method of forming a shield in a sputter deposition apparatus, comprising the steps of:

providing a shielding material;

combining a volatile suspending liquid and a binder with the shielding material to form a slurry;

applying the slurry to a shielding surface in a sputter deposition apparatus; and

drying the slurry by evaporating the volatile suspending liquid at a temperature at least as low as the temperature at which the combining step was performed, thereby forming a shield for reducing impurities deposited in a coating on a substrate during a sputter deposition process.

16. The method of claim 15, wherein the step of drying the slurry is performed at ambient temperature.
