

**THIS OPINION WAS NOT WRITTEN FOR PUBLICATION**

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte GREGORY T. CASKEY

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Appeal No. 95-2312  
Application No. 07/897,870<sup>1</sup>

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ON BRIEF

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Before JOHN D. SMITH, GARRIS and WEIFFENBACH, Administrative Patent Judges.

GARRIS, Administrative Patent Judge.

**DECISION ON APPEAL**

This is a decision on an appeal from the final rejection of claims 1, 3, 5-8, 10-16, 18-24, 26-29, 31-36, 38, 39, 42, 43 and 45-54 which are all of the claims remaining in the application.

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<sup>1</sup> Application for patent filed June 12, 1992.

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The subject matter on appeal relates to a substantially non-sparking magnetron sputtering target having regions of sputtering and nonsputtering for a direct current sputtering process which comprises insulation means for electrically insulating a non-sputtering region from a sputtering gas plasma created during the magnetron sputtering process, the insulation means being of sufficient thickness to substantially prevent catastrophic sparking during sputtering. The appealed subject matter also relates to methods of making and using such a target. This subject matter is adequately illustrated by independent claim 1 which reads as follows:

1. A substantially nonsparking magnetron sputtering target having regions of sputtering and nonsputtering for a direct current sputtering process, comprising

an electrically conducting magnetron target material for use in a magnetron sputtering process; and

insulation means for electrically insulating said non-sputtering regions from a sputtering gas plasma created during said magnetron sputtering process, said insulation means selected from the group consisting of 1) a substantially nonsputtering, electrically insulating material substituted for said nonsputtering regions of said target and 2) a substantially non-sputtering, electrically insulating material covering said non-sputtering regions of said target which are exposed to said gas plasma during sputtering, said insulation means being of sufficient thickness to substantially prevent catastrophic sparking during sputtering.

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The references relied upon by the examiner as evidence of obviousness are:

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Hoffman	4,525,264	Jun. 25,
1985		
PCT Application (Dickey)	WO 92/02659	Feb. 20,
1992		

All of the claims on appeal stand rejected under 35  
U.S.C.

§ 103 as being unpatentable over Hoffman in view of Dickey.

We refer to the Brief and Reply Brief and to the Answer for a complete exposition of the opposing viewpoints expressed by the appellant and the examiner concerning the above noted rejection.

As a preliminary matter, we note that, after expressing differing viewpoints in the Brief and Answer concerning claim groupings, the appellant has stated on page 11 of the Reply Brief that dependent claims 6, 7 and 8 are grouped and argued separately, and the examiner has not contested this statement in his Supplemental Answer. Accordingly, we will separately consider these dependent claims in our disposition of this appeal.

OPINION

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For the reasons which follow, we will sustain the examiner's rejection of independent claims 1, 22 and 49 and of the nonargued claims which depend therefrom, but we will not sustain his rejection of independent claims 48, 52 and 53 nor of the claims which depend therefrom nor of argued dependent claims 6-8. That is, the rejection of claims 1, 3, 5, 10-16, 19-24, 26-29, 32-36, 38, 39, 42, 43, 46, 47 and 49-51 will be sustained, but the rejection of claims 6-8, 18, 31, 45, 48 and 52-54 will not be sustained.

We agree with the examiner's basic position that Hoffman satisfies the requirement of independent claims 1, 22 and 49 concerning an electrically insulating material covering the nonsputtering regions of the target to thereby substantially prevent catastrophic sparking during sputtering. Stated otherwise, these independent claims fail to distinguish over Hoffman in the manner argued by the appellant. More specifically, the insulating collar 57 of Hoffman (e.g., see Figure 1 and lines 49-53 in column 5) and the target region thereunder correspond to the here claimed insulating material and nonsputtering regions. Moreover, patentee's insulating collar would necessarily and inherently prevent catastrophic

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sparkling (at least for some period of time to some extent which is a degree of sparking prevention embraced by the claims under consideration). In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977)(where claimed and prior art products are identical or substantially identical, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product).

The appellant argues that Hoffman contains no teaching of covering nonsputtering regions with insulating material to substantially prevent catastrophic sparking. While this may be true, it does not militate against a determination that Hoffman's insulating collar would inherently and necessarily substantially prevent catastrophic sparking from nonsputtering regions. The appellant further argues that "Hoffman clearly leaves exposed nonsputtering regions of the target across its surface and length such as is evident from even a cursory review, for example Fig. 1" (Reply Brief, page 3). However, the target regions shown to be exposed in patentee's Figure 1 are in fact sputtering regions from which target material is uniformly removed (e.g., see lines 12 through 37 in column 2).

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It is only those target regions covered by insulating collar 57 which may be appropriately characterized as nonsputtering regions since the target material covered by this collar is not exposed to gas plasma and therefore cannot be sputtered<sup>2</sup>.

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<sup>2</sup> It is here appropriate to clarify that claim language such as "electrically insulating material covering said nonsputtering regions of said target which are exposed to said (continued...)"

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In light of the foregoing, we will sustain the examiner's § 103 rejection of claims 1, 22 and 49 as well as nonargued dependent claims 3, 5, 10-16, 19-21, 23, 24, 26-29, 32-36, 38, 39, 42, 43, 46, 47, 50 and 51 as being unpatentable over Hoffman in view of Dickey.

As for argued dependent claims 6-8, we share the appellant's perception that the applied prior art contains no teaching or suggestion of the features recited therein, and on the record before us the examiner has proffered no insight on this matter. Under these circumstances, we cannot sustain his rejection of these claims.

We also cannot sustain the examiner's rejection of independent claims 48, 52 and 53 and concomitantly claims 18, 31, 45 and 54 which depend therefrom. It is the examiner's basic position that it would have been obvious to combine Hoffman and Dickey in such a manner as to obtain the subject matter defined by these claims including the removing and

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<sup>2</sup>(...continued)  
gas plasma during sputtering" (claim 1) must be interpreted as defining nonsputtering regions "which are exposed to said gas plasma during sputtering" but for the presence of the aforementioned insulating material.

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depositing steps of independent claim 48 and the curved,  
electrically isolated shield

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feature of independent claims 52 and 53. We agree with the appellant, however, that these references contain no teaching, suggestion or incentive for somehow combining the disparate teachings thereof in such a manner as to result in the subject matter defined by the aforementioned independent claims, and again the examiner has provided us with essentially no explanation as to how and why an ordinarily skilled artisan would have combined these reference teachings to thereby result in subject matter corresponding to that defined by the claims under consideration.

SUMMARY

For the above stated reasons, we have sustained the examiner's rejection of claims 1, 3, 5, 10-16, 19-24, 26-29, 32-36, 38, 39, 42, 43, 46, 47 and 49-51 but not his rejection of claims 6-8, 18, 31, 45, 48 and 52-54<sup>3</sup>.

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<sup>3</sup> In accordance with 37 CFR § 1.192(c)(1993) and the appellant's previously discussed request on page 11 of the Reply Brief, we have considered dependent claims 6-8 separately but have considered the other nonargued dependent claims on appeal to stand or fall with the claims from which they depend. Although our consequent treatment of the argued versus nonargued dependent claims is entirely appropriate from a procedural perspective, this treatment may have produced an inconsistent disposition of certain dependent claims.

(continued...)

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The decision of the examiner is affirmed-in-part.

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

**AFFIRMED-IN-PART**

JOHN D. SMITH	)	
Administrative Patent Judge)	)	
	)	
	)	
BRADLEY R. GARRIS	)	BOARD OF PATENT
Administrative Patent Judge)	)	APPEALS AND
	)	INTERFERENCES
	)	
CAMERON WEIFFENBACH	)	
Administrative Patent Judge)	)	

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<sup>3</sup>(...continued)

Specifically, the rejection sustained above includes nonargued dependent claims certain of which may define features corresponding to those defined by argued claims that were determined to be patentable over the applied prior art. The appellant and the examiner may wish to resolve this inconsistency in any further prosecution that may occur.

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