

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 30

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte DANIEL A. NEPELA  
and  
PAUL H. SCHMIDT

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Appeal No. 1998-0203  
Application No. 08/121,876

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ON BRIEF

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Before HAIRSTON, KRASS, and JERRY SMITH, Administrative Patent Judges.

HAIRSTON, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1 through 3 and 5 through 21. In a first Amendment After Final (paper number 10), claims 6, 10 and 11 were canceled. In a second Amendment After Final (paper number 12), claims 1, 16 and 18 were amended. In a third Amendment After Final (paper number

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22), claim 1 was amended. Accordingly, claims 1 through 3, 5, 7 through 9 and 12 through 21 remain before us on appeal.

The disclosed invention relates to a hard wear-resistant material deposited on specific portions of side rail surfaces of an air bearing slider.

Claim 1 is illustrative of the claimed invention, and it reads as follows:

1. An air bearing slider having an air bearing surface with a leading edge and a trailing edge and defining opposing first and second sides between said edges, said air bearing slider being spaced closely to and interfacing with a magnetic recording disk comprising:

first and second tapered regions disposed at said leading edge and adjacent to said respective first and second sides;

first and second side rails adjacent to said respective first and second tapered regions, said side rails defining a central recessed region therebetween, each of said first and second side rails further including respective first and second surfaces substantially coplanar with the air bearing surface; and

a hard wear-resistant material deposited on only first and second portions of said respective first and second surfaces, wherein the area of each of said first and second portions is a fraction of the area of each of said respective first and second surfaces, the rearmost portion of said material being spaced from the trailing edge of said slider;

whereby stiction force at the slider-to-disk

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interface is effectively minimized while said slider maintains its tilt or pitch.<sup>1</sup>

The references relied on by the examiner are:

Chang et al. (Chang) 1992	5,175,658	Dec. 29,
Chapin et al. (Chapin) 1991)	5,267,109 (effective filing date Jun. 14,	Nov. 30, 1993
Krantz et al. (Krantz) 1994	5,345,353	Sep. 6,
		(filed Sep. 21, 1992)

Claims 1, 3, 5, 7, 12 through 14, 16 and 21 stand rejected under 35 U.S.C. § 103 as being unpatentable over Krantz.

Claim 18<sup>2</sup> stands rejected under 35 U.S.C. § 103 as being unpatentable over Krantz in view of Chapin.

Claims 2, 8, 9, 15, 17, 19 and 20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Krantz in view of Chang.

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<sup>1</sup>It should be noted that the phrase "tilt or pitch" is only mentioned in the disclosure (specification, page 5) in connection with the Figure 5 embodiment wherein the hard wear-resistant material (i.e., DLC carbon) is along the entire length of the slider.

<sup>2</sup> The claimed "range of 100-600 microinches" appears to lack support in the disclosure.

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Reference is made to the reply brief (paper number 22) and the answers (paper numbers 19 and 23) for the respective positions of the appellants and the examiner.

OPINION

We have carefully considered the entire record before us, and we will reverse the 35 U.S.C. § 103 rejections of claims 1 through 3, 5, 7 through 9 and 12 through 21.

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As indicated supra, the claimed invention requires the deposit of hard wear-resistant material on specific portions of side rail surfaces of an air bearing slider. In some of the claims, the hard wear-resistant material is deposited on a fraction of the surface area of the rails (claims 18 through 21). In other claims, the hard wear-resistant material is deposited on a fraction of the total surface area of the rails (claims 16 and 17). In more detailed claims, the hard wear-resistant material is deposited on a fraction of the surface area of the side rails, and the rearmost portion of the material is spaced from the trailing edge of the slider (claims 1 through 3, 5, 7 through 9, 12 and 13). The remaining claims on appeal require the deposit of the hard wear-resistant material over 10-70% of the length of the side rails, and a thin residual layer of the hard wear-resistant material over substantially the remainder of the air bearing surface of the slider (claims 14 and 15).

Appellants and the examiner all agree that Krantz does not disclose a hard wear-resistant material deposited on only portions of the surface area of the rails (reply brief, pages 3 and 5; answer, page 4). From the disclosure in Krantz

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(column 8, line 63 through column 9, line 15), we presume that the hard wear-resistant material is deposited on 100% of the surface area of the rails. Notwithstanding the teachings of Krantz, the examiner indicates that it would have been obvious to one of ordinary skill in the art to provide "the air bearing slider of Krantz et al[.] ('353) with a wear resistant material that is only deposited on portions of the rails instead of along the whole rails to reduce unnecessary materials in order to reduce the cost of manufacturing." The record on appeal is completely devoid of evidence that costs of manufacturing would be reduced by depositing the material on only portions of the rails. The cost of manufacturing may in fact increase because selective deposit of the material requires shielding of the areas that are to remain free of the material. Krantz is also silent as to depositing the material at two different thicknesses on different surfaces of the air bearing slider. Since no comparative evidence has been presented by the examiner, we refuse to speculate as to cost savings from selective deposit of the noted material. Thus, the obviousness rejection of claims 1, 3, 5, 7, 12 through 14, 16 and 21 is reversed because we agree with the appellants

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(reply brief, page 5) that the examiner reached the obviousness determination with the benefit of impermissible hindsight. The obviousness rejection of claims 2, 8, 9, 15 and

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17 through 20 is likewise reversed because the teachings of Chapin and Chang do not cure the noted shortcoming in the teachings of Krantz.

DECISION

The decision of the examiner rejecting claims 1 through 3, 5, 7 through 9 and 12 through 21 under 35 U.S.C. § 103 is reversed.

REVERSED

KENNETH W. HAIRSTON	)	
Administrative Patent Judge	)	
	)	
	)	
	)	BOARD OF PATENT
ERROL A. KRASS	)	APPEALS AND
Administrative Patent Judge	)	INTERFERENCES
	)	
	)	
JERRY SMITH	)	
Administrative Patent Judge	)	

KWH:hh

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