

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte ALEXANDER P. PAYNE, WILLIAM C. CAIN,  
MICHAEL E. DEVILLIER, HAROLD J. HAMILTON,  
ROBERT D. HEMPSTEAD, DARREN T. IMAI,  
MARK A. LAUER, DIMITRE A. LATEV, and  
DAVID D. ROBERTS

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Appeal No. 1999-2235  
Application No. 08/577,493

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ON BRIEF

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Before LALL, DIXON, and GROSS, Administrative Patent Judges.  
GROSS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 through 8, 10, and 14 through 20, which are all of the claims pending in this application.

Appellants' invention relates to an information storage system. Specifically, the system includes a rigid disk having a media layer and a transducer having a core of magnetically permeable material shaped as a loop with a submicron amagnetic gap between the two ends of the loop. A magnetic signal from

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the transducer impinges on the media layer with a maximum strength oriented substantially perpendicular to the surface of the disk. Claim 14 is illustrative of the claimed invention, and it reads as follows:

14. An information storage system comprising:

a rigid disk having a surface and an associated magnetic media layer with an easy axis of magnetization oriented substantially perpendicular to said surface, and

a transducer having a projection extending toward said surface, with a conductive coil that is inductively coupled to a loop of magnetic material having a pair of ends that are contained by said projection and separated by an amagnetic gap, at least one of said ends being exposed adjacent to said surface,

wherein said ends are disposed adjacent to said media such that a magnetic signal transmitted from said transducer has a maximum strength felt by said media directed transversely to said surface.

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

Hamilton	4,423,450	Dec. 27, 1983
Frey et al. (Frey)	5,333,086	Jul. 26, 1994

Daniel W. Chapman, "A new approach to making thin film head-slider devices," IEEE Transactions on Magnetism, Vol. 25, No. 5 (September 1989), pp. 3686-88. (Chapman)

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Claims 1 through 6, 8, 10, and 14 through 20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Chapman in view of Hamilton.

Claim 7 stands rejected under 35 U.S.C. § 103 as being unpatentable over Chapman in view of Hamilton and Frey.

Reference is made to the Examiner's Answer (Paper No. 22, mailed January 26, 1999) for the examiner's complete reasoning in support of the rejections, and to appellants' Brief (Paper No. 21, filed November 9, 1998) for appellants' arguments thereagainst.

#### OPINION

We have carefully considered the claims, the applied prior art references, and the respective positions articulated by appellants and the examiner. As a consequence of our review, we will reverse the obviousness rejections of claims 1 through 8, 10, and 14 through 20.

Independent claim 1 recites, in pertinent part, "a magnetic signal from said transducer impinges upon said media layer with a strength oriented substantially perpendicular to said surface that is larger than a maximum strength oriented parallel to said surface." In other words, the perpendicular

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component of the magnetic signal that impinges upon the media is greater than the maximum longitudinal component.

Similarly, independent claim 14 requires that the magnetic signal "has a maximum strength felt by said media directed transversely to said surface."

The examiner admits (Final Rejection, page 3) that Chapman fails to disclose the perpendicular component of the magnetic signal being larger than the component parallel to the surface. In fact, Chapman does not discuss perpendicular recording at all. The examiner (Final Rejection, page 3) points to the teachings of Hamilton that thin film heads may be used to record data on perpendicularly oriented media and that the head must contact or nearly contact the media to realize the full potential of the perpendicular recording. The examiner further asserts (Final Rejection, page 3) that because submicron gaps and small fly heights are known in the art, it would have been obvious, in light of Hamilton's disclosure, to provide such a small gap and fly height to enable perpendicular recording. However, nowhere in either the Final Rejection or the Answer does the examiner point to

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any disclosure for the perpendicular component of the magnetic signal being the maximum component.

Appellants (Brief, page 12) refer to Figure 3 and the associated text in the specification. According to appellants, as shown by the graph of Figure 3, the maximum perpendicularly oriented field component of the magnetic signal is greater than the maximum longitudinal field component only when the perpendicular distance  $D$  from the head is a fraction of the magnetic gap  $G$ . Distance  $D$  includes any airgap and the combined thicknesses of any overcoats and lubricant on the media layer.

Chapman has a proposed gap dimension of 0.25 micron. Chapman does not disclose the specifics of the media layer. Although Hamilton may suggest contact between the head and the media layer, thereby eliminating an airgap from the distance  $D$ , Hamilton does not disclose whether the media layer includes an overcoat layer and/or lubricant, and, if so, what the thickness thereof would be. Therefore, it is unclear from the evidence provided by the examiner whether the value of  $D$  would be a fraction of the gap  $G$ , such that the perpendicular magnetic field component would be maximum. Further the

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examiner has provided no line of reasoning why such a relationship would have been obvious. As the examiner has not accounted for each and every element of the claims, the examiner has failed to establish a *prima facie* case of obviousness. Consequently, we cannot sustain the rejection of claims 1 and 14, nor of their dependents, claims 2 through 6, 8, 10, and 15 through 20.

Regarding claim 7, the examiner adds Frey to the combination of Chapman and Hamilton. However, Frey does not cure the above-noted deficiency of the primary combination. Accordingly, we will not sustain the rejection of claim 7.

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CONCLUSION

The decision of the examiner rejecting claims 1 through 8, 10, and 14 through 20 under 35 U.S.C. § 103 is reversed.

REVERSED

PARSHOTAM S. LALL	)	
Administrative Patent Judge	)	
	)	
	)	
	)	
	)	BOARD OF PATENT
JOSEPH L. DIXON	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
	)	
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	)	
ANITA PELLMAN GROSS	)	
Administrative Patent Judge	)	

apg/vsh

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