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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 30

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte NAOSHI YAMADA, HITOSHI OHTA, HIROSHI FUKUMOTO, NAOYA TANAKA, YUICHI YOSHIDA, and TAKUJI ODA

Appeal No. 1996-3386
Application No. 08/136,123[1]

HEARD: October 6, 1999

Before HAIRSTON, HECKER, 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 4, 6 through 9, 18, and 19. Claim 5 is canceled. Claims 10 through 17 are withdrawn from consideration.

[1] Application for patent filed October 14, 1993.

Appellants' invention relates to a magnetic head with alternating long and short projections and, between adjacent projections, conductive segments forming a helical coil around a

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

1. A magnetic structure comprising a substrate having:

a plurality of ridge-like projections, each of said projections having slant side surfaces, said plurality of projections including a first subset of long projections having a first length and a second subset of short projections having a second length shorter than said first length, said long and short projections being arranged in an alternating fashion with nearest neighboring short projections being separated from one another by a respective one of the long projections, a short projection and an adjacent long projection defining a groove-shape recess therebetween;

a first conductive passage comprising a plurality of parallel and conductive passages formed on opposed slant side surfaces of adjacent long and short projections;

a first insulating layer stacked on said first conductive passage and said substrate;

a magnetic core made of magnetic material enclosed in said recess;

a second insulating layer stacked on said magnetic core; and

a second conductive passage formed on said second insulating layer to sequentially connect ends of said first conductive passage to form a helical coil.

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

Kendall	3,881,244	May 06, 1975
Sato et al. (Sato)	4,743,988	May 10, 1988
Pisharody	5,189,580	Feb. 23, 1993
	(filed Jan. 18, 1991)	

Claims 1 through 4 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.[2]

Claims 1 through 4, 6 through 9, 18, and 19 stand rejected under 35 U.S.C. § 103 as being unpatentable over Sato in view of Kendall, further in view of Pisharody for claims 4, 7/4, 8/4, 9/4, 18/7/4, and 19/7/4.

Reference is made to the Examiner's Answer (Paper No. 21, mailed April 1, 1996) for the examiner's complete reasoning in support of the rejections, and to appellants' Brief (Paper No.

[2] The statement of the rejection includes only claims 1 through 4. However, as claims 6 through 9, 18, and 19 each depend from one or more of claims 1 through 4, they include all of the limitations and thus all of the deficiencies under 35 U.S.C. § 112, second paragraph, of claims 1 through 4, from which they depend.

20, filed January 29, 1996) 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 affirm the indefiniteness rejections of claims 1 through 4 under 35 U.S.C. § 112, second paragraph, and reverse the obviousness rejections of claims 1 through 4, 6 through 9, 18, and 19 under 35 U.S.C. § 103.

The examiner first questions how "a first conductive passage" can comprise "a plurality of parallel and conductive passages." This language appears in claims 1, 2, and 4. Similar language appears in claim 3 as "each" conductive passage (a single passage) comprises "a plurality of parallel and conductive passages." Although we believe that we understand what is meant, we agree with the examiner that it is confusing to recite a singular element comprising a plurality of the same element.

The examiner further asserts that "opposed slant side surfaces" in line 12 of claim 1 lacks antecedent basis. Since

"adjacent long and short projections" in line 12 is not preceded by "said" or "the" it is unclear whether the projections are the same as those introduced in the first paragraph of the claim or if there are additional projections. If there are extra projections, then the slant side surfaces referenced in line 12 would be for those extra projections and would lack antecedent basis. In other words, without a clear indication that the slant side surfaces and projections of line 12 are the same as those recited earlier in the claim, the claim can be interpreted two different ways. Accordingly, we agree that claim 1 is indefinite. The same language can be found in each of claims 2 through 4. Therefore, we will affirm the rejection of claims 1 through 4 under 35 U.S.C. § 112, second paragraph.[3]

[3] We note that both the examiner and appellants discuss the inconsistencies between the preambles of claims 6 through 9, 18, and 19 and of the claims from which they depend as if the claims were rejected as being indefinite, though technically there is no formal rejection of claims 6 through 9, 18, and 19 under 35 U.S.C. § 112, second paragraph. Nonetheless,

Claims 1, 2, and 4 each require "long and short projections being arranged in an alternating fashion with nearest neighboring short projections being separated from one another by a respective one of the long projections." Claim 3 requires that "a respective one of said long projections is disposed laterally adjacent one side of each of said short projections and a respective another of said long projections is disposed laterally adjacent another side of said each of said short projections." In other words, for every claim, each short projection must have a long projection on each side.

The examiner relies on Figure 17 of Sato as showing all of the elements of claim 1 except for "longer ridge-like projections on the sides of short projections" (see Answer, page 5). The examiner turns to Figures 4-5 of Kendall for "longer ridge-like projections (5) on the sides of short projections (9)"

---

we agree that inconsistencies exists which easily can be and should be corrected.

(see Answer, page 5). The examiner asserts (Answer, page 6) that

> one of ordinary skill in the art would have been motivated to modify the transducer having the same length inner and outer projections as shown by Sato et al '988 with the substrate of the transducer having longer ridge-like projections on the sides of short projections as disclosed in Kendall '244 since it would have provided additional electrical isolation between the various coil connections on the substrate.

Assuming that Kendall's studs 9 are short projections, Kendall shows two rows of such short projections adjacent one another. Thus, contrary to the examiner's assertions, Kendall does not disclose short projections between long projections. Further, Kendall teaches (column 4, lines 21-24, 33-34, and 53-56) depositing the core material between two rows of short projections, or rather the helix of Kendall is formed between two rows of short projections. The "longer ridge-like projections (5)" referenced by the examiner are merely sidewalls, not involved in forming the helix, and consequently do not serve the same function as Sato's or appellants' long projections. On the other hand, each long projection of Sato is integral to the

formation of a helix. Accordingly, Kendall cannot and does not suggest substituting adjacent short and long projections for pairs of adjacent long projections of Sato. In summary, even if it were somehow obvious to combine the structures of Sato and Kendall, the result would not be alternating short and long projections as recited in the claims. Therefore, we cannot affirm the rejection of claims 1 through 3 and their dependent claims.

As to claim 4 and the claims which depend therefrom, Pisharody (the additional reference applied by the examiner) does not teach alternating short and long projections. Accordingly, Pisharody does not cure the deficiencies in the combination of Sato and Kendall. Therefore, we must reverse the rejection of claim 4 and its dependents.

CONCLUSION

The decision of the examiner rejecting claims 1 through 4 under 35 U.S.C. § 112, second paragraph is affirmed. The decision of the examiner rejection claims 1 through 4, 6 through 9, 18, and 19 under 35 U.S.C. § 103 is reversed.

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

KENNETH W. HAIRSTON Administrative Patent Judge	)	
STUART N. HECKER Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
ANITA PELLMAN GROSS Administrative Patent Judge	)	

vsh

Appeal No. 1996-3386
Application No. 08/136,123

BURNS, DOANE, SWECKER & MATHIS
GEORGE MASON BUILDING
WASHINGTON & PRINCE STS
P.O. BOX 1404
ALEXANDRIA, VA 22313-1404