

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 13

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DANIEL P. SCHOTT

Appeal No. 1999-2277
Application 08/803,578

ON BRIEF

Before FLEMING, RUGGIERO and BLANKENSHIP, ***Administrative Patent Judges.***

FLEMING, ***Administrative Patent Judge.***

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 1, 4-8, 10, 11, 13 and 15-17, all the pending claims. Claims 2, 3, 9, 12, 14 and 18 are cancelled.

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The instant invention relates to magnetic head suspensions and particularly to the attachment of an air bearing slider to a magnetic head suspension. Appellant's Specification, page 1, lines 5-7. Sliders are commonly attached to the flexure with resilient adhesives. Specification, page 2. However, the use of an adhesive to secure the slider to the flexure is undesirable because the manufacturing process is time-consuming and tedious. Specification, page 2. The invention enables a method wherein the time-consuming steps of epoxy application are avoided resulting in a more reliable and accurately oriented slider in the final magnetic head suspension assembly. The invention features a magnetic head suspension that includes a load beam, a flexible member or flexure, and a slider. Specification, page 4, lines 18-21. Bonding pads are formed on the edge of the slider and corresponding bonding pads are formed on the flexure. Specification, page 4, lines 18-22. The bonding pads of the slider and the corresponding bonding pads on the flexure are attached to each other via bonding joints. Specification, page 4, lines 22-24. The bonding joints are

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preferably attached to the bonding pads by ultrasonic means.
Specification, page 4.

Appellant's independent claim 1, reproduced below, is
representative of the invention:

1. A magnetic head suspension assembly comprising:
an air bearing slider having a leading edge and a
trailing edge;
bonding pads disposed on said leading and trailing edges;
and
a flexible member having an attachment surface, and metallic
bonding joints for fixedly attaching said bonding pads to said
attachment surface via ultrasonic means for securing said slider
to said flexible member without adhesive.

In rejecting Appellant's claims, the Examiner relies on
the following reference:

Kudo et al. (Kudo) 5,567,186 Aug. 12,
1997

Claims 1, 4-8, 10, 11, 13 and 15-17 stand rejected under
35 U.S.C. § 103 as unpatentable over Kudo. Rather than repeat
the arguments of Appellant and Examiner, we refer the reader to

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the Appellant's Brief¹ and Examiner's Answer² for the respective details thereof.

OPINION

With full consideration being given the subject matter on appeal, the Examiner's rejection and the arguments of Appellant and Examiner, for the reasons stated **infra**, we will reverse the Examiner's rejection of claims 1, 4-8, 10, 11, 13 and 15-17 under 35 U.S.C. § 103 as unpatentable over Kudo.

In rejecting claims under 35 U.S.C. § 103, the Examiner bears the initial burden of establishing a **prima facie** case of obviousness. **In re Oetiker**, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The Examiner can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. **In re Fine**, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Only if this initial

¹ Appellant filed a Brief for Appellant on June 9, 1998.

² The Examiner, in response to Appellant's Brief, mailed an Examiner's Answer on December 23, 1998.

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burden is met does the burden of coming forward with evidence or argument shift to the Appellant. *Oetiker*, 977 F.2d at 1445, 24 USPQ2d at 1444. **See also *In re Piasecki***, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984) ("After a prima facie case of obviousness has been established, the burden of going forward shifts to the applicant."). If the examiner fails to establish a **prima facie** case, the rejection is improper and accordingly merits reversal. *Fine*, 837 F.2d at 1074, 5 USPQ2d at 1598.

An obviousness analysis commences with a review and consideration of all the pertinent evidence and arguments. **See *Oetiker***, 977 F.2d at 1445, 24 USPQ2d at 1444 ("In reviewing the examiner's decision on appeal, the Board must necessarily weigh all of the evidence and argument."). Accordingly, we now consider the claims on appeal.

Appellant argues that Appellant's invention solves a prior art problem by the use of metallic bonding joints for joining the slider and flexure by ultrasonic means without the use of an adhesive. Brief at page 4. In contrast, Appellant contends, Kudo requires an adhesive to join a slider to a flexible wiring substrate. Brief at page 4. Therefore, Appellant concludes

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that Kudo cannot anticipate or suggest Appellant's claimed magnetic head assembly because Kudo fails to address or solve the problem associated with the use of an adhesive for assembling a slider and a flexure and for joining the bonding pads of the slider and flexure. Brief at page 5.

The Examiner responds that the Kudo teaching of an adhesive in addition to the bonding joints is just a preferred embodiment of the Kudo invention. Examiner's Answer at page 4. The adhesive, the Examiner asserts, is not required to bond the slider to the flexible member, but is merely a desired feature to enable a stronger bond. Examiner's Answer at page 4. Further, the Examiner contends that one of ordinary skill in the art at the time of the invention would have been faced with the engineering trade-off of strength of bond versus manufacturing cost. Examiner's Answer at page 4. The Examiner states that "[e]liminating the adhesive would decrease the strength of the bond, but it would also reduce the number of steps in the manufacturing process. This would make the suspension assembly easier to assemble and less costly." Examiner's Answer at page 4. Concluding, the Examiner asserts that "[i]n the case of Kudo, the strength of bond is considered more important so the

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inventor decided to use an adhesive in addition to bond joints. Others might opt for the less costly manufacturing process and decide to eliminate the adhesive." Examiner's Answer at page 4.

Our analysis of Kudo reveals the use of an adhesive between the slider and a flexible wiring substrate:

The magnetic head slider[] is bonded by means of an adhesive (not shown) on the upper surface of the flexible wiring substrate[] which is formed on the gimbal[] of the suspension[]. Column 5, lines 53-56.

However, we find that the use of an adhesive to accomplish a bond between the slider and the flexible wiring substrate is integral to the Kudo invention rather than an optional embodiment of Kudo. This adhesive requirement is further evidenced by Kudo's claim 1 which recites in part:

A device for supporting a magnetic head slider having . . . a support member for supporting the magnetic head slider, said bottom surface of said slider being fixed to said support member **by an adhesive**; (Emphasis added). Column 7, line 62 to column 8, line 3.

We further find no evidence or suggestion that Kudo would accomplish the bonding between the slider and the flexible wiring substrate by means other than an adhesive. Kudo uses gold ball bonding to connect the signal terminals to the signal electrodes. Kudo discloses:

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The signal terminals[] of the slider[] are directly connected to the signal electrodes[] on the wiring substrate[] by . . . using gold balls. . . . The grounding terminal[] of the slider[] is also directly connected to the grounding electrode[] on the wiring substrate[] by . . . ball bonding using a gold ball. Column 6, line 65, to column 7, lines 4.

We find no evidence in Kudo that teaches or suggests that the gold ball bonding is used to attach or support an attachment of the magnetic slider to the flexible wiring substrate. We find that the gold ball bonding is only used to attach the signal electrodes to the respective signal terminals of the slider.

We are not inclined to dispense with proof by evidence when the proposition at issue is not supported by a teaching in the prior art reference or shown to be common knowledge of unquestionable demonstration. Our reviewing court requires this evidence in order to establish a **prima facie** case. *Piasecki*, 745 F.2d at 1471-72, 223 USPQ at 787-88; *In re Knapp-Monarch Co.*, 296 F.2d 230, 232, 132 USPQ 6,8 (CCPA 1961); *In re Cofer*, 354 F.2d 664, 668, 148 USPQ 268, 271-72 (CCPA 1966).

Based on the evidence and arguments presented, and the pertinent law in this matter, we find that the Examiner has

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failed to establish a **prima facie** case of unpatentability with respect to the claims. Accordingly, we reverse the Examiner's rejection of claims 1, 4-8, 10, 11, 13 and 15-17 as unpatentable over Kudo.

REVERSED

MICHAEL R. FLEMING)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
JOSEPH RUGGIERO)	APPEALS AND
Administrative Patent Judge)	INTERFERENCES
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