

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. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ASHOK K. KAPOOR
and
RATAN K. CHOUDHURY

Appeal No. 1998-2761
Application No. 08/586,587

ON BRIEF

Before KRASS, FLEMING, and LALL, **Administrative Patent Judges**.

LALL, **Administrative Patent Judge**.

DECISION ON APPEAL

This is an appeal from the final rejection¹ of claims of 1, 9 and 11, all the other claims having been canceled.

The disclosed invention is related to the use of silicon nitride in the side wall of a metal line to provide lateral

¹There was an amendment after the final rejection, paper no. 9, which was approved for entry on appeal, paper no. 10.

Appeal No. 1998-2761
Application No. 08/586,587

support to the metal line so as to inhibit lateral distortion
or

Appeal No. 1998-2761
Application No. 08/586,587

expansion of the aluminum layer of the metal line. The invention is further illustrated by the following claim.

1. An improved integrated circuit structure wherein at least an aluminum layer portion of metal lines is inhibited from lateral distortion which comprises:
 - a) an integrated circuit structure having a surface formed of an insulation material;
 - b) one or more metal lines comprising an aluminum layer portion formed over said surface of said insulation material; and
 - c) silicon nitride metal line sidewall retention structures formed on the sidewalls of said metal lines to inhibiting [sic] lateral distortion of said aluminum layer portion of said metal lines.

The references relied on by the Examiner are:

Jones, Jr. (Jones)	4,980,752	Dec. 25, 1990
Lin	5,498,555	Mar. 12, 1996
		(Filed on Nov. 7, 1994)
Nishioka et al. (Nishioka)	5,605,858	Feb. 25, 1997
		(Filed on Jun. 7, 1995)

Claims 1, 9 and 11 stand rejected under 35 U.S.C. § 103 over Jones, Lin and Nishioka.

Reference is made to Appellants' briefs² and the Examiner's answer for their respective positions.

²There was a reply brief, paper no. 14 which is considered in making this decision.

Appeal No. 1998-2761
Application No. 08/586,587

Appeal No. 1998-2761
Application No. 08/586,587

OPINION

We have considered the record before us, and we will reverse the rejection of claims 1, 9 and 11.

In rejecting a claim under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the Examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hosp. Sys., Inc. v.

Appeal No. 1998-2761
Application No. 08/586,587

Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed.
Cir. 1984). These showings by the

Appeal No. 1998-2761
Application No. 08/586,587

Examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

Analysis

At the outset, we note that there is a single principal issue in all the claims on the appeal (brief, page 7). Therefore, we treat a single claim, 1, as the representative claim. The Examiner points to the metal line side wall, 22 or 42, in Jones. The Examiner refers to Lin and Nishioka for replacing the metallic side wall with the silicon nitride side wall from Lin and Nishioka (answer, pages 3 to 4). Appellants argue (brief, pages 9 to 17, and reply brief, pages 2 to 6) that there is no teaching or suggestion in any of the applied references to replace the metallic side wall of Jones with the insulating spacers (that is, the recited silicon nitride side wall) from Lin and/or Nishioka. The Examiner has cited various court cases (answer, pages 4 to 5) to support the suggested combination, however, they are not applicable in the instant case, as noted by Appellants (reply brief, pages 2 to 4). While Lin and Nishioka each shows a silicon nitride

Appeal No. 1998-2761
Application No. 08/586,587

spacer, the role of the spacer is entirely different from that of the side wall (spacer) in the claimed device.

Specifically, in Lin, the silicon nitride spacer is said to increase the vertical electric field above the LDD (lightly doped drain) region around the electrode of an FET (field effect transistor); and in Nishioka, the silicon nitride spacer 40 is used in the construction of an FET. There is no teaching or suggestion in any applied reference to use silicon nitride as a side wall in an interconnect member such as 30 of Jones. The Federal Circuit has stated that "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." In re Fritch, 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992), citing In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). "Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor." Para-Ordnance Mfg., Inc. v. SGS Importers Int'l, Inc., 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995), citing W. L. Gore & Assocs. v. Garlock, Inc., 721 F.2d at 1551, 1553, 220 USPQ at 311, 312-13

Appeal No. 1998-2761
Application No. 08/586,587

(Fed. Cir. 1983). Consequently, we find that the suggested combination of Jones, Lin and Nishioka is not justified. Therefore, we do not sustain the obviousness rejection of claim 1.

Appeal No. 1998-2761
Application No. 08/586,587

Claims 11 and 9 also contain at least the same limitation as claim 1. Therefore, we do not sustain the obviousness rejection of claims 11 and 9 for the same rationale.

In conclusion, the Examiner's decision rejecting claims 1, 9 and 11 under 35 U.S.C. § 103 is reversed.

REVERSED

)	
ERROL A. KRASS))
Administrative Patent Judge)	
)	
)	
)	BOARD OF PATENT
MICHAEL R. FLEMING)	
Administrative Patent Judge)	APPEALS AND
)	
)	INTERFERENCES
)	
PARSHOTAM S. LALL)	
Administrative Patent Judge)	

PSL:hh

Appeal No. 1998-2761
Application No. 08/586,587

John P. Taylor
P.O. Box 1598
Temecula, CA 92593-1598