

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(2) is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GEORGE E. SERY
and JAN A. SMUDSKI

Appeal No. 1996-1431
Application 08/087,140

ON BRIEF

Before JERRY SMITH, FLEMING and RUGGIERO, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's rejection of claims 76-94, which constitute all the claims remaining in the application.

The disclosed invention pertains to the manufacture of circuits which include memory cells and peripheral transistors. Typically, the gate oxide of the memory cells is formed at a

different time from the gate oxide of the peripheral transistors. The disclosed invention provides a circuit in which the gate oxide thicknesses of the memory cells, the peripheral transistors and additional high voltage transistors are all made different from each other.

Representative claim 76 is reproduced as follows:

76. A memory circuit comprising:

a) a high voltage transistor, said high voltage transistor comprising:

a first set of first and second spaced-apart regions formed in a silicon substrate, said first set of first and second spaced-apart regions substantially forming a first channel in said substrate therebetween;

a first gate insulator comprising a first oxide layer, said first gate insulator disposed on said first channel;

a high voltage transistor control gate disposed on said first gate insulator;

b) a peripheral transistor comprising:

a second set of first and second spaced-apart regions formed in said silicon substrate, said second set of first and second spaced-apart regions substantially forming a second channel therebetween;

a second gate insulator comprising a second oxide layer, said second oxide layer being a different layer from said first oxide layer and having a different thickness than said first oxide layer, said second gate insulator disposed on said second channel;

a peripheral transistor control gate disposed on said second gate insulator; and

c) a floating gate memory device comprising:

first and a third second spaced-apart regions substantially forming a third channel therebetween;

a third set of first and second spaced apart regions formed in said silicon substrate, said third set of

a third gate insulator disposed on said third channel;

a floating gate;

an intergate insulator disposed on said floating gate;

and,

a memory device control gate disposed on said intergate insulator.

The examiner relies on the following references:

Oshima	5,034,798	July 23, 1991
Arakawa	5,291,043	Mar. 01, 1994
		(filed Nov. 14, 1990)

Claims 76-94 stand rejected under 35 U.S.C. § 103. As evidence of obviousness the examiner offers Oshima in view of Arakawa.

Rather than repeat the arguments of appellants or the examiner, we make reference to the brief and the answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejection advanced by the examiner and the evidence

of obviousness relied upon by the examiner as support for the rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, the appellants' arguments set forth in the brief along with the examiner's rationale in support of the rejection and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the evidence relied upon and the analysis provided by the examiner would not have suggested to one of ordinary skill in the art the obviousness of the invention as set forth in claims 76-94. Accordingly, we reverse.

Appellants have indicated that for purposes of this appeal the claims will stand or fall together in the following two groups: Group I has claims 76-84, and Group II has claims 85-94 [brief, page 8]. Consistent with this indication appellants have made no separate arguments with respect to any of the claims within each group. Accordingly, all the claims within each group will stand or fall together. Note In re King, 801 F.2d 1324, 1325, 231 USPQ 136, 137 (Fed. Cir. 1986); In re Sernaker, 702 F.2d 989, 991, 217 USPQ 1, 3 (Fed. Cir. 1983). Therefore, we will only consider the rejection against claims 76 and 85 as representative of all the claims on appeal.

In rejecting claims 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. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the 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). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. See Id.;

In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976). Only those arguments actually made by appellants have been considered in this decision. Arguments which appellants could have made but chose not to make in the brief have not been considered [see 37 CFR § 1.192(a)].

With respect to representative, independent claim 76, the examiner points to Oshima as teaching the integration of a memory cell and a peripheral transistor in which the gate oxide of each device is different. Oshima discloses nothing about additional high voltage elements being integrated with the above-noted components. The examiner cites Arakawa as teaching that high voltage transistors are conventionally integrated with memory cells. Since Oshima teaches a difference between the gate oxides of the memory cells and the peripheral transistors, the examiner concludes that the obvious addition of a high voltage transistor

to the Oshima memory circuit would have resulted in the claimed invention [answer, pages 3-4].

Appellants argue that the combination of Oshima and Arakawa does not teach or suggest that the gate oxide layer of a peripheral transistor should be different from the gate oxide layer of a high voltage transistor as recited in claim 76 [brief, pages 9-10]. We agree with appellants.

The examiner's position that each device on the peripheral region of a memory circuit would be constructed separately and have a different gate oxide layer than the other devices on the peripheral region is based on pure speculation. Oshima teaches a different oxide layer for only the memory cell and a peripheral transistor. Arakawa offers no suggestion with respect to the oxide layers of any of the components disclosed therein. The only suggestion to make the oxide layer of a peripheral transistor different from the oxide layer of a high voltage transistor comes from appellants' own disclosure.

The 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, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992); In re Gordon, 733 F.2d 900, 902, 221

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USPQ 1125, 1127 (Fed. Cir. 1984). The examiner has not pointed to any teachings within the applied prior art which supports the three different oxide layers as recited in claim 76. Therefore, we do not sustain the rejection of claims 76-84.

With respect to representative, dependent claim 85, since this claim depends from claim 76 as discussed above, the examiner clearly has failed to demonstrate the obviousness of such dependent claims. We also note that the examiner has completely failed to address the limitations of claim 85 or to respond to appellants' arguments that the examiner has ignored the limitations of this claim. The examiner's failure to address on this record the specific limitations of claims 85-94 constitutes a complete failure to establish a prima facie case of the obviousness of these claims. Therefore, we also do not sustain the rejection of claims 85-94.

In summary, we have not sustained the examiner's rejection of claims 76-94. Therefore, the decision of the examiner rejecting claims 76-94 is reversed.

REVERSED

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