

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. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MARK R. SIMPSON

Appeal No. 1999-2006
Application No. 08/561,960

ON BRIEF

Before LALL, GROSS, and BARRY, Administrative Patent Judges.

LALL, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection¹ of claims 1 to 9. Claim 10 has been canceled. The invention relates to a non-volatile memory cell having a single, lateral transistor in a semiconductor body having a major surface. This cell comprises a semiconductor source region and a drain region of a first conductivity type adjoining the major surface and separated by a channel region of

¹ An amendment after the final rejection was filed as Paper No. 9, and the Examiner approved its entry, see Paper No. 10.

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a second conductivity type, opposite that of the first conductivity type, and adjoining the major surface. A floating gate extends over the channel region and portions of the source and drain regions, separated therefrom by a gate oxide. A control gate is adjacent the floating gate and insulated therefrom. The floating gate is separated from the major surface of the semiconductor body by a substantially constant distance over substantially the entire length of the floating gate. The floating gate and the major surface each have corners, which corners are adjacent the ends of the source region and the drain region along side the channel region. Additionally, the corners of the floating gate and the major surface have substantially conforming contours.

A further understanding of the invention can be obtained by the following claim.

1. A nonvolatile memory cell of the type having a single lateral transistor in a semiconductor body having a major surface comprising semiconductor source and drain regions of a first conductivity type adjoining said major surface and separated by a channel region of a second conductivity type opposite that of the first conductivity type and adjoining said major surface, a floating gate over at least said channel region and portions of said source and drain regions and separated therefrom by a gate oxide on said major surface, and a control gate over said floating gate and insulated therefrom, wherein said floating

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gate is separated from said major surface by a substantially constant distance over substantially the entire length of said floating gate, and corners of said floating gate and said major surface have substantially conforming contours adjacent ends of said source and drain regions alongside said channel region.

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The Examiner relies on the following references:

Paterson	4,763,177	Aug. 9, 1988
Matsushita	5,502,321	Mar. 26, 1996
	(filing date: Oct. 24, 1994)	

Claims 1 and 6 to 9 stand rejected under 35 U.S.C. § 102 as anticipated by Matsushita, while claims 2 to 5 stand rejected under 35 U.S.C. § 103 over Matsushita in view of Paterson.

Rather than repeat the positions and the arguments of Appellant and the Examiner, we make reference to the briefs² and the answer for their respective positions.

OPINION

We have considered the rejections advanced by the Examiner. We have, likewise, reviewed the Appellant's arguments against the rejections as set forth in the briefs.

It is our view, after consideration of the record before us, that the rejections under 35 U.S.C. § 102 and under 35 U.S.C. § 103 are not proper. Accordingly, we reverse.

² A reply brief was filed as Paper No. 13. The Examiner noted its entry, see Paper No. 14.

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ANALYSIS

We consider the two groups of rejections separately below.

Rejection under 35 U.S.C. § 102

A prior art reference anticipates the subject of a claim when the reference discloses every feature of the claimed invention, either explicitly or inherently, See Hazani v. Int'l Trade Comm'n, 126 F.3d 1473, 1477, 44 USPQ2d 1358, 1361 (Fed. Cir. 1997) and RCA Corp. v. Applied Digital Data Sys., Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984).

We consider claim 1. On pages 4 and 5 of the Examiner's answer, the Examiner lays out his explanation of how claim 1 reads on Matsushita. The Examiner specifically points to figures 19 and 20 of Matsushita. Appellant argues, brief at page 5, that "(i) in Matsushita the floating gate and the major surface of the semiconductor body are not separated by a substantially constant distance over substantially the entire length of the floating gate and (ii) Matsushita does not have a corner adjacent the end of its drain region along side the channel." The Examiner responds, answer page 8, that "the term 'substantially' is a relative term and is not defined by the claim, the specification does not provide a standard for

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ascertaining the requisite degree of 'substantially constant distance." The Examiner further contends, id. at page 8, that "Matsushita clearly discloses in both Figures 19 and 20, an end corner to floating gate (7) which is adjacent an end of the drain region (10, 12) alongside the channel and thus meets and anticipates presently pending claim 1." Appellant replies, reply brief at page 2, that "claim 1 recites 'and said floating gate and said major surface each having corners adjacent ends of said source and drain regions alongside said channel region'".

We agree with Appellant. By looking at the figures of the disclosure, the term "substantially" clearly means that the floating gate is lined over the entire region of the channel and the corners adjacent the source and the drain regions. Also, we agree with Appellant that Figures 19 and 20 of Matsushita do not show a floating gate having corners adjacent ends of said source and drain regions alongside said channel region. Therefore, Matsushita does not anticipate claim 1.

In passing, we note that, even though the Examiner did not use Paterson to anticipate claim 1, Paterson, in Figure 3, does show all the claimed elements of claim 1 except that it also does not show the claimed substantially constant separation

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between the floating gate and the major surface because the oxide layers 32 and 32a over the source and the drain regions and the channel region are of different thicknesses. Therefore, Paterson too does not anticipate claim 1.

Rejection under 35 U.S.C. § 103

In our analysis, we are guided by the general proposition that in an appeal involving a rejection under 35 U.S.C. § 103, an examiner has the burden to make out a prima facie case of obviousness. If that burden is met, the burden of going forward 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 In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); 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).

We are further guided by the precedent of our reviewing court that the limitations from the disclosure are not to be imported into the claims. In re Lundberg, 244 F.2d 543, 113 USPQ 530

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(CCPA 1957); In re Queener, 796 F.2d 461, 230 USPQ 438 (Fed. Cir. 1986). We also note that the arguments not made separately for any individual claim or claims are considered waived. See 37 CFR § 1.192(a) and (c). In re Baxter Travenol Labs., 952 F.2d 388, 391, 21 USPQ2d 1281, 1285 (Fed. Cir. 1991) ("It is not the function of this court to examine the claims in greater detail than argued by an appellant, looking for nonobviousness distinctions over the prior art."); In re Wiechert, 370 F.2d 927, 936, 152 USPQ 247, 254 (CCPA 1967)("This court has uniformly followed the sound rule that an issue raised below which is not argued in that court, even if it has been properly brought here by reason of appeal is regarded as abandoned and will not be considered. It is our function as a court to decide disputed issues, not to create them.").

Claims 2 to 5 are rejected on pages 5 and 6 of the Examiner's answer over Matsushita in view of Paterson. The Examiner asserts, answer at page 6, that "to provide the device of Matsushita with a shallow groove provided in the major surface at the channel region and overlapping the ends of the

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source and drain region as taught by Paterson would have been obvious ... because Paterson discloses the same nonvolatile memory device structure as Matsushita ..." However, we agree with Appellant that Paterson does not cure the deficiencies noted above in regard to meeting the claimed limitations of claim 1 which are incorporated into claim 2 because of its dependency. Therefore, we do not sustain the obviousness rejection of claim 2 and its dependent claims 3 to 5 over Matsushita in view of Paterson.

In conclusion, the decision of the Examiner rejecting claims 1 and 6 to 9 under 35 U.S.C. § 102 and claims 2 to 5 under 35 U.S.C. § 103 is reversed.

REVERSED

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

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LANCE LEONARD BARRY)
Administrative Patent Judge)

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Copies:

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APJ GROSS

APJ BARRY

DECISION: REVERSED

Panel Change: Yes No

Prepared: May 3, 2002

3 MEM. CONF. Y N

OB/HD

GAU: 2800

PALM: ____

ACTS 2 ____

BOOK ____

DISK (FOIA) ____

MONTHLY REPORT ____