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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte AGERICO L. ESQUIVEL

Appeal No. 1997-1247
Application 08/484,196

ON BRIEF

Before THOMAS, BARRETT, and LALL, Administrative Patent Judges.

LALL, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 25 to 34, all the other claims having been canceled.

The disclosed invention pertains to an integrated circuit with rows and columns of floating-gate programmable memory cells having slot trench isolation structures among the memory

cells.

The trenches are dielectric filled and are segmented. The invention is further illustrated below by claim 25.

25. A programmable memory device having a memory array formed in a semiconductor body including a plurality of memory cells arranged into rows and columns comprising:

a plurality of parallel and spaced apart slot trenches, said slot trenches formed in sequences between said columns, said slot trenches located at the crossings of diagonals with respect to said rows and columns, each of said slot trenches extending below said surface of said semiconductor body between said columns;

a plurality of floating gates formed on a surfce (sic) of said semiconductor body but separated from said surface of said semiconductor body by a gate dielectric, said floating gates positioned between said slot trenches;

a plurality of control gates, each of said control gates extending over at least one of said floating gates and a portion of said slot trenches, said control gates running perepndicular (sic) to said slot trenches and parallel of each other, exactly two of said control gates running over each of said slot trenches away from the periphery of the array of said rows and columns of memory cells; and

a plurality of source/drain regions formed in said semiconductor body between said control gates and between said slot trenches.

The references relied on by the Examiner are:

Gill et al. (Gill)	5,045,489	Sep. 3, 1991

Japanese Published Patent Applications

Seiya	61-184883	Aug. 18, 1986
Koyama	62-84550	Apr. 18, 1987

Claims 25 to 34 stand rejected under 35 U.S.C. § 112, second paragraph. Claims 25 to 31 and 34 stand rejected under 35 U.S.C. § 103 over Koyama, and claims 32 and 33 over Koyama, Gill and Seiya.

Reference is made to Appellant’s brief and the Examiner's answer for their respective positions.

OPINION

We have considered the record before us, and we will reverse the rejection of claims 25 to 34 under 35 U.S.C. § 112, second paragraph. We will also reverse both rejections under 35 U.S.C. § 103.

At the outset, we note that Appellant has elected [brief, page 2] claims 25 to 33 and 34 as group I, and claim 34 as group II. We will take both the groups together for the section 112 rejection first and treat the two groups separately for the section 103 rejections.

Rejection under 35 U.S.C. § 112

The second paragraph of 35 U.S.C. § 112 requires claims to set out and circumscribe a particular area with a reasonable degree of precision and particularity. In re Johnson, 558 F.2d 1008, 1015, 194 USPQ 187, 193 (CCPA 1977). In making this determination, the definiteness of the language employed in the claims must be analyzed, not in a vacuum, but always in light of the teachings of the prior art and of the particular application disclosure as it would be interpreted by one possessing the ordinary level of skill in the pertinent art. Id.

The Examiner's focus during examination of claims for compliance with the requirement for definiteness of 35 U.S.C. § 112, second paragraph, is whether the claims meet the threshold requirements of clarity and precision, not whether more suitable language or modes of expression are available. Some latitude in the manner of expression and the aptness of terms is permitted even though the claim language is not as precise as the Examiner might desire. If the scope of the invention sought to be

patented cannot be determined from the language of the claims with a reasonable degree of certainty, a rejection of the claims under 35 U.S.C. § 112, second paragraph, is appropriate.

In the instant case, the Examiner points to the “the crossings” (claim 25) aslacking an antecedent basis, and “perepndicular” (claim 25) being not the same “perpendicular” being argued in the brief. The Examiner also asserts [answer, page 3] that the specification and the drawings do not distinctly illustrate the orientation defined by “exactly two of said control gates running over each of said slot trenches away from the periphery [of the array of said rows and columns of memory cells].” the periphery [of the array of said rows and columns of memory cells].”

Appellant responds to each of these points on page 4 of the brief. We agree with Appellant that an artisan would have recognized that the word “the” in the phrase “the crossing” is being used as an article and does not require an antecedent basis. Similarly, the word “perepndicular” simply is a typographical error. Furthermore, an artisan would have

understood the recited orientation defined by “exactly two ... [...cells]” by virtue of the geometrical characteristics of an array.

We therefore conclude that the Examiner’s position does not pass muster under the above case law for the section 112, second paragraph rejection.

Rejection under 35 U.S.C. § 103

Before we discuss the two groups of claims, we note the general discussion of an obviousness rejection. 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. System., 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).

Furthermore, the Federal Circuit states that "[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 Fitch, 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992), citing In Re Gordon, 773 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. V. SGS Importers Int'l, 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995), citing W. Lish. Gore & Assocs., v. Garlock, Inc., 721 F.2d 1540, 1551, 220 USPQ 303, 311 (Fed. Cir. 1983).

Claims 25 to 33

We consider claim 25 as the representative claim. After reviewing the positions of the Examiner [answer, pages 4 to 6] and Appellant [brief, page 3], we are convinced that Koyama, the base reference used for the obviousness rejection, does not disclose the claimed limitation of [see figs. 8 and 9 of the specification for the configuration] "plurality of parallel and spaced apart slot trenches ... located at the crossings of diagonals with respect to said rows and columns." The trenches in Koyama, 15a and 15b, form a continuous grid-like set of grooves and, in such a configuration, the claimed phrase "slot trenches located at the crossings of diagonals"

would not have any significance or relevance. We also do not find how Koyama

could suggest the claimed configuration of the slot trenches. Therefore, we do not sustain the obviousness rejection of claim 25, and its grouped claims 26 to 31 over Koyama.

With respect to claims 32 and 33, the Examiner has added two other references, Gill and Seiya. However, they, singly or together, do not cure the deficiency noted above. Thus, we also do not sustain the obviousness rejection of claims 32 and 33 over Koyama, Gill and Seiya.

Claim 34

We have evaluated the Examiner's position [answer, pages 5 and 6] and Appellant's arguments [brief, page 3] and conclude that claim 34 would not have been obvious over Koyama. We agree with Appellant that Koyama does not disclose or teach the claimed limitation of "said trenches being filled with a dielectric material." Whereas we agree with the Examiner that item 16 (fig. 2a) in Koyama is an insulator (dielectric) and can be considered as "filling" the trench 15,

we can not ignore the fact that the other part of the trench is in direct contact with the substrate; see items 11, 15 and 17 in fig. 2b. The configuration of the latter part of the trench is thus opposite to the above claimed limitation. Therefore, we do not sustain the obviousness rejection of claim 34 over Koyama.

In conclusion, we do not sustain the Examiner's rejections of claims 25 to 34 under 35 U.S.C. § 112, second paragraph, and under 35 U.S.C. § 103.

DECISION

The decision of the Examiner rejecting claims 25 to 34 under 35 U.S.C. § 112, second paragraph and under 35 U.S.C. § 103 is reversed.

REVERSED

JAMES D. THOMAS	)
Administrative Patent Judge	)
	)
	)
	) BOARD OF PATENT
LEE E. BARRETT	)

Administrative Patent Judge	)	APPEALS AND
	)	
	)	INTERFERENCES
	)	
PARSHOTAM S. LALL	)	
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