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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 11/446,016 | 06/02/2006 | Mark Victor Dyson | DYSON 3-51-45 | 9728 |
| 47396 | 7590 | 02/15/2013 | EXAMINER | |
| HITT GAINES, PC LSI Corporation PO BOX 832570 RICHARDSON, TX 75083 | | | KIM, SUN M | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2813 | |
| | | | NOTIFICATION DATE | DELIVERY MODE |
| | | | 02/15/2013 | ELECTRONIC |

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MARK VICTOR DYSON, NACE ROSSI, and RANBIR SINGH

Appeal 2011-006354
Application 11/446,016
Technology Center 2800

Before JEAN R. HOMERE, CAROLYN D. THOMAS, and GREGORY J.
GONSALVES, *Administrative Patent Judges*.

GONSALVES, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from the rejection of claims 21-32 (App. Br. 3). Claims 1-20 were cancelled (*id.*). We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

The Invention

Exemplary claim 21 follows:

21. A semiconductor device, comprising:

a silicon substrate with a buried implant;

an insulating oxide layer over said implant with a base interposed in said oxide layer;

a source and drain over said insulating oxide layer and spaced apart so that a portion of each of said source and drain is over said base;

a gate over said base and between said source and drain;

a first sidewall insulating layer on an entire edge of said source between said source and gate and over said base;

a second sidewall insulating layer on an entire edge of said drain between said drain and gate and over said base; and

a lead in contact with said buried implant and spaced apart from said source, drain, and gate.

Claims 21 and 25 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Kovacic (U.S. Pat. App. Pub. No. 2003/0199153) (Ans. 4-6).

Claims 21-26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sato (US Pat. No. 6,680,522) in view of Bresse (US Pat.

No. 3,538,399) and Kerr (U.S. Pat. App. Pub No. 2005/0098852) (Ans. 7-11).

Claims 27-32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sato in view of Hutcheson (US Pat. No. 7,037,799) and Kerr (Ans. 12- 17).

FACTUAL FINDINGS

We adopt the Examiner's factual findings as set forth in the Answer (Ans. 3, *et seq.*).

ISSUES

Appellants' responses to the Examiner's positions present the following issues:

1. Did the Examiner err in finding that Kovacic discloses "a base interposed in said oxide layer," as recited in independent claim 21?
2. Did the Examiner err in concluding that the combination of Sato, Bresse, and Kerr renders obvious claim 21?

ANALYSIS

Anticipation Rejection of Claims 21 and 25

Appellants contend that the Examiner erred in rejecting independent claim 21 as anticipated because Kovacic does not disclose a "base (212) interposed in the insulating oxide layer (202)" (App. Br. 6). In support of their contention, Appellants argue that Kovacic instead teaches "a base (212) on top of and over an insulating oxide layer (202)" (*id.* (emphasis omitted)).

The Examiner found, however, that Figure 24 of Kovacic shows “an insulating oxide layer ‘SiO₂’ over said implant ‘n⁺’ with a base ‘Si/SiGe’ interposed in the oxide layer” (Ans. 19). We agree with the Examiner’s finding. Our reviewing Court requires us to give a claim its broadest reasonable meaning consistent with the Specification. *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997). Appellants’ Specification shows a base 440 in between portions of an oxide layer 408 (FIG. 4B). Like the base of Appellants’ Specification, the base Si/SiGe of Kovacic is shown as being in between portions of an insulating oxide layer SiO₂ (Kovacic, FIG. 24). Accordingly, under the broadest reasonable claim construction consistent with the Specification, Kovacic’s structure qualifies as having a base interposed in an insulating oxide layer, as required by claim 21. Accordingly, we find no error in the Examiner’s anticipation rejection of claim 21 as well as claim 25 dependent therefrom because Appellants did not set forth any separate patentability arguments for claim 25 (*see* App. Br. 7).

Obviousness Rejection of Claims 21-26 Over Sato, Bresse and Kerr

Appellants argue that the Examiner erred in rejecting claims 21-26 as obvious because “substituting the sidewall structure of Kerr in Sato, as the Examiner suggests, would clearly render Sato unsatisfactory for its intended purpose” (App. Br. 10). In particular, Appellants argue that “the complex sidewall structure of Sato allows for very little variation in electrical characteristics even if the thicknesses of certain elements vary. As a result, the complex sidewall structure of Sato achieves the above-noted objective of

Sato where ‘variation of electrical characteristic can be remarkably suppressed’” (*id.*).

We note, however, that the Examiner did not suggest that the sidewall structure of Kerr should be bodily incorporated into Sato’s structure (*see* Ans. 9). Rather, the Examiner reasoned that one of ordinary skill in the art, upon reading Kerr, would not have been discouraged from extending sidewall insulating layers over the entire edges of the source and drain in Sato’s structure (*see* Ans. 20-21). We find no error in the Examiner’s conclusion that merely extending the sidewall insulating layers as taught by Kerr would not render Sato’s structure unsatisfactory for its intended purpose (*see id.*).

Moreover, the Examiner concluded that “[t]he fundamental intended purpose of a sidewall insulating layer, such as that of Sato and that of Kerr (element 170 of Figure 12), is to ensure that the source/drain electrodes do not electrically contact the gate electrode such that an electrical connection is made through the base” (Ans. 21-22). The Examiner also concluded that “[t]he substitution of the sidewall structure of Kerr does not render this intended purpose unsatisfactory” (Ans. 22). We agree with the Examiner’s conclusion and underlying findings of fact. Extending the sidewall insulating layers as taught by Kerr (Figure 12, item 170) within Sato’s structure would not cause the source and drain (32/33) to contact the gate electrode to thereby make an electrical connection between the source and drain through the gate (*see* Sato, Figure 11A).

Appellants also argue that Kerr teaches away from Sato because “Sato clearly avoids bringing a silicon nitride layer in contact with an intrinsic base” (App. Br. 11). Appellants argue that “Kerr expressly teaches that

silicon nitride layer 156, through silicon nitride sidewall spacer portions 170 and 180, is in contact with the base 176” (*id.*). But a prior art reference that discloses a different solution does not teach away from the claimed invention unless it also criticizes, discredits or otherwise discourages the claimed solution. *See In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004). And Kerr does not state that its structure could not be modified to avoid contact between a silicon nitride layer and an intrinsic base (*see Sato*, col. 21, l. 51 – col. 22, l. 53). Accordingly, we find no error in the Examiner’s obviousness rejection of claim 21 as well as claims 22-26 dependent therefrom because Appellants did not set forth any separate patentability arguments for those dependent claims (*see App. Br. 12*).

*Obviousness Rejection of Claims 27-32 Over Sato,
Hutcheson and Kerr*

Appellants set forth the same patentability arguments for claim 27 as they did for claim 21 (*see App. Br. 12-13*). For the reasons expressed *supra*, therefore, we will sustain the Examiner’s rejection of claim 27. We will also sustain the Examiner’s rejection of the claims dependent from claim 27 (i.e., claims 28-32) because Appellants did not set forth any separate patentability arguments for those claims (*see id.* at 13).

DECISION

We affirm the Examiner’s decision rejecting claims 21 and 25 as anticipated and claims 21-33 as unpatentable under 35 U.S.C. § 103(a).

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

Appeal 2011-006354
Application 11/446,016

AFFIRMED

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